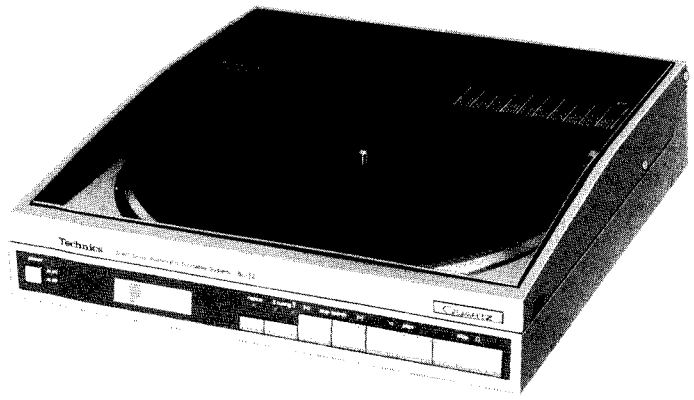
ORDER NO. DAD84060093C8

Service Manual

Quartz Direct Drive Automatic Turntable System

SL-J2/(K)

[E], [EK], [XL], [EG], [EB],
[EH], [EF], [Ei], [EC], [XA], [XM]



T4P is the standard mark for the "P-mount" plug-in-connector system. Products carrying this mark are inter-changeable and compatible with each other.

***The colors of this model include silver and black.**
***The black type model is provided with (K) in the Service Manual.**

Areas

- * [E] is available in Switzerland and Scandinavia.
- * [EK] is available in United Kingdom.
- * [XL] is available in Australia.
- * [EG] is available in F.R. Germany.
- * [EB] is available in Belgium.
- * [EH] is available in Holland.
- * [EF] is available in France.
- * [Ei] is available in Italy.
- * [EC] is available in Czechoslovakia.
- * [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
- * [XM] is available in Central South America.

Please use this manual together with the service manual for Model No. SL-J2, Order No. DAD84050089C1.

English

Specifications

Specifications are subject to change without notice for further improvement.
Weight and dimensions shown are approximate.

■ General

Power supply:	~220 V, 50 Hz
Power consumption:	12 W
Dimensions: (W × H × D)	31.5 × 8.8 × 31.5 cm (12-1/2" × 3-1/2" × 12-1/2") (Maximum height when dust cover is open.) 39 cm (15-23/64")
Weight:	4.3 kg (9.5lb.)

■ Turntable section

Type:	Quartz direct drive Fully automatic turntable
Features:	Auto start/Auto lead-in Auto return Auto stop Repeat play Direct music select play Forward and backward skip play Forward and backward search play Auto size select Record presence detection
Drive method:	Direct drive
Motor:	Brushless DC motor
Drive control method:	Quartz-phase-locked control
Turntable platter:	Aluminum die-cast Diameter 30 cm (12")
Turntable speeds:	33-1/3 rpm and 45 rpm Auto speed select (Manual selection possible)
Wow and flutter:	0.012% WRMS* 0.025% WRMS (JIS C5521) ±0.035% peak (IEC 98A Weighted)

*Measured by obtaining signal from built-in frequency generator of motor assembly.

Rumble:	−56 dB (IEC 98A Unweighted) −78 dB (IEC 98A Weighted)

■ Tonearm section

Type:	Linear tracking tonearm 4-pivot gimbal suspension
Effective length:	10.5 cm (4-1/8")
Tracking error angle:	Within ±0.1°
Effective mass:	9 g (including cartridge)
Resonance frequency:	12 Hz
Tonearm drive motor:	DC motor
Phono cable capacitance:	150 pF

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

SL-J2

■ Cartridge section

Type:	Moving magnet stereo cartridge
Magnetic circuit:	All laminated core
Frequency response:	10 Hz ~ 40 kHz 20 Hz ~ 10 kHz ±1 dB
Output voltage:	2.5 mV at 1 kHz 5 cm/s. zero to peak lateral velocity (7 mV at 1 kHz, 10 cm/s. zero to peak 45° velocity [DIN 45 500])
Channel separation:	22 dB at 1 kHz
Channel balance:	Within 1.8 dB at 1 kHz
Recommended load impedance:	47 kΩ~100 kΩ
Compliance (dynamic):	12×10^{-6}cm/dyne at 100 Hz
Stylus pressure range:	1.25±0.25 g (12.5±2.5 mN)
Weight:	6 g (cartridge only)
Replacement stylus:	EPS-30ES

- The power supply for this unit varies depending upon the areas. Also, the parts used for power supply are different. So, refer to the circuit diagram and the replacement parts list.
  - ★ 220V (50/60 Hz) for Continental Europe.
  - ★ 240V (50/60 Hz) for United Kingdom and Australia.
  - ★ 110V-120V/220V-240V (50/60 Hz) for other areas.
  - ★ [EK], [XA], and [XM] areas are provided with voltage selector.

Deutch

TECHNISCHE DATEN

Änderungen der technischen Daten vorbehalten.
Die angegebenen Gewichts- und Abmessungsdaten sind circa Werte.

■ Allgemeine Daten

Stromversorgung:	~220 V, 50 Hz Wechselstrom
Leistungsaufnahme:	12 W
Abmessungen: (B × H × T)	31,5 × 8,8 × 31,5 cm 31,5 × 39 × 31,5 cm (Maximale Höhe bei vollständig geöffnetem Gehäuseoberteil)
Gewicht:	4,3 kg

■ Plattenteller

Typ:	Vollautomatischer Plattenspieler mit Quarz-Direktantrieb
Eigenschaften:	Auto-Start/Auto-Zuführung Rückführautomatik Stopautomatik Wiederholtes Abspiel Abspiel mit Direktmusikwahl Vorwärts-und Rückwärtssprungabspiel Vorwärts- und Rückwartssuchspiel Autom.Plattengrößewahl Schallplattendetektion
Antrieb:	Direktantrieb
Motor:	Kollektorloser Gleichstrommotor
Antriebsregel-Methode:	Quarz-Steuerung QPL
Plattenteller:	Aluminium-Druckguß Durchmesser 30 cm
Plattenteller-Drehzahlen:	33-1/3 und 45 U./min. Automatische Drehzahlwahl (manuelle Wahl möglich)
Gleichlaufschwankungen:	0,012% WRMS* 0,025% WRMS (JIS C5521) ±0,035% Spitze (IEC 98A bewertet)

*Gemessen anhand von Signalen vom eingebauten Frequenzgenerator des Motorteils.

Rumpeln:	−56 dB (IEC 98A unbewertet) −78 dB (IEC 98A bewertet)

■ Tonarm

Typ:	Linearabtastungs-Tonarm mit Kardan-aufhängung mit 4-Punkt-Drehlager
Effektive Länge:	10,5 cm
Spurfehlwinkel:	Innerhalb ±0,1°
Effektive Masse:	9 g (einschließlich Tonabnehmer)
Resonanzfrequenz:	12 Hz
Tonarm-Antriebsmotor:	Gleichstrommotor
Phonokabel-Kapazität:	150 pF

■ Tonabnehmer

Typ:	Stereo-Magnet-Tonabnehmer
Magnetkreis:	Ganzlamellenkern
Frequenzgang:	10 Hz bis 40 kHz 20 Hz bis 10 kHz ±1 dB
Ausgangsspannung:	2,5 mV bei 1 kHz 5 cm/s. Null-zu-Spitze, lateral [7 mV bei 1 kHz 10 cm/s. Null-zu-Spitze, 45° (DIN 45 500)]
Kanaltrennung:	22 dB bei 1 kHz
Kanalabweichung:	Innerhalb 1,8 dB bei 1 kHz
Empfohlene Endimpedanz:	47 kΩ~100 kΩ
Nachgiebigkeit (dynamisch):	12×10^{-6}cm/dyn bei 100 Hz
Auflagekraft-Einstellbereich:	1,25±0,25 g (12,5±2,5 mN)
Gewicht:	6 g (nur Tonabnehmer)
Ersatznadel:	EPS-30ES

Français

CARACTERISTIQUES

Les spécifications sont susceptibles d'être modifiées sans préavis.
Le poids et les dimensions donnés sont approximatifs.

■ Généralités

Alimentation: Alternatif 220 V, 50 Hz
Consommation: 12 W
Dimensions: 31,5 × 8,8 × 31,5 cm
(L × H × P) 31,5 × 39 × 31,5 cm
(Hauteur maximum lorsque le dessus (couvercle protège-poussière) est ouvert.)
Poids: 4,3 kg

■ Platine de lecture

Type: Entraînement direct par quartz
Platine entièrement automatique
Caractéristiques: Démarrage automatique/Entrée automatique
Retour automatique
Arrêt automatique
Audition répétée
Audition sélectionnée musicale directe
Audition par saut vers l'avant et vers l'arrière
Audition de recherche vers l'avant et vers l'arrière
Sélection automatique du diamètre des disques
Détection de la présence d'un disque.
Système d'entraînement: Entraînement direct
Moteur: Moteur C.C. sans balai
Système de commande d'entraînement: Réglage d'accrochage de phase par quartz
Plateau de lecture: Aluminium moulé sous pression
Diamètre 30 cm
Vitesses de la platine: 33-1/3 et 45 t/p.m.
Sélecteur de vitesse automatique
(Sélection manuelle possible)
Pleurage et scintillement: 0,012% de valeur efficace*
0,025% de valeur efficace (JIS C5521)
±0,035% de crête (IEC 98A Pondéré)
*Mesuré par l'obtention d'un signal provenant du générateur de fréquences incorporé de l'ensemble du moteur.
Ronflement: −56 dB (IEC 98A Non pondéré)
−78 dB (IEC 98A Pondéré)

■ Bras de lecture

Type: Bras de lecture d'alignement linéaire de type à suspension à la cardan à 4 pivots
Longueur effective: 10,5 cm
Angle d'erreur de piste: En deçà de ±0,1°
Masse réelle: 9 g (y compris la cellule pick-up)
Fréquence de résonance: 12 Hz
Moteur d'entraînement du bras de lecture: Moteur C.C.
Capacitance du câble phono: 150 pF

■ Cellule pick-up

Type: Cellule pick-up stéréo à aimant mobile
Circuit magnétique: Noyau entièrement feuilleté
Réponse en fréquence: 10 Hz à 40 kHz
20 Hz à 10 kHz ±1 dB
Tension de sortie: 2,5 mV à 1 kHz; 5 cm/s. zéro à vitesse latérale de crête
(7 mV à 1 kHz; 10 cm/s. zéro à vitesse 45° de crête [DIN 45 500])
Séparation des canaux: 22 dB à 1 kHz
Equilibrage des canaux: En deçà de 1,8 dB à 1 kHz
Impédance de charge recommandée: 47 kΩ~100 kΩ
Elasticité (dynamique): 12×10^{-6}cm/dyne à 100 Hz
Plage de la force verticale d'appui: 1,25±0,25 g (12,5±2,5 mN)
Poids: 6 g (cellule seule)
Remplacement de la pointe de lecture: EPS-30ES (Forme elliptique)

Español

ESPECIFICACIONES

Las especificaciones quedan sujetas a cambios sin aviso previo.
Los pesos y las dimensiones indicados son aproximativos.

■ En general

Alimentación de corriente: ~220 V, 50 Hz
Consumo de corriente: 12 W
Dimensiones: 31,5 x 8,8 x 31,5 cm
(Ancho x Alto x Prof.) 31,5 x 39 x 31,5 cm
(Altura máxima cuando la tapa contra el polvoestá abierta.)
Peso: 4,3 kg

■ Sección del plato giratorio

Tipo: Plato giratorio totalmente automático por accionamiento directo controlado por cuarzo.
Ventajas: Arranque/descenso automáticos
Retorno automático
Parada automática
Ejecución repetida
Ejecución con selección directa de la música
Ejecución saltando hacia adelante o hacia atrás
Ejecución con búsqueda hacia adelante o hacia atrás
Selección automática de tamaño
Detección de presencia de discos
Método de accionamiento: Accionamiento directo
Motor: Motor de corriente continua sin escobillas
Método de control de accionamiento: Control enclavado de fase de cuarzo
Platillo del plato giratorio: Aluminio fundido
30 cm de diámetro
Velocidades del plato giratorio: 33-1/3 y 45 rpm
Selección automática de la velocidad
(También posibilidad de seleccionar a mano)
Ululaciones y trémolo: 0,012% WRMS*
0,025% WRMS (JIS C5521)
± 0,035% cresta
(IEC 98A Ponderado)

* Medido obteniendo una señal proveniente del generador de frecuencias incorporado del conjunto del motor.

Ruido de rodadura: −56 dB (IEC 98A Non ponderado)
−78 dB (IEC 98A ponderado)

■Sección del brazo sonoro

Tipo: Brazo sonoro de seguimiento lineal de tipo con equilibrio dinámico con suspensión cardánica de 4-pivotes
Longitud efectiva: 10,5 cm
Angulo de error de seguimiento: Inferiro a 0,1° aproxim.
Masa efectiva: 9 g (incluyendo el cartucho)
Frecuencia de resonancia: 12 Hz
Motor de accionamiento del brazo sonoro: Motor de corriente continua
Capitancia del cable del fonógrafo: 150 pF

Sección del cartucho

Tipo: Cartucho estereofónido de imán móvil
Circuito magnético: Núcleo totalmente laminado
Respuesta de frecuencia: 10 Hz a 40 kHz
20 Hz a 10 kHz ± 1 dB
Voltaje de salida: 2,5 mV a 1 kHz
Velocidad lateral de cero a cresta de 5 cm/s. (7 mV a 1 kHz. Velocidad de 45° de cero a cresta de 10 cm/s. [DIN 45 000])
Separación de canales: 22 dB a 1 kHz
Equilibrio de canales: Inferior a 1,8 dB a 1 kHz
Impedancia de carga recomendada: 47 kΩ a 100 kΩ
Elasticidad (dinámica): 12×10^{-6} cm/dina a 100 Hz
Radio de presión de la aguja: 1,25 ± 0,25 g (12,5 ± 2,5 mN)
Peso: 6 g (cartucho solamente)
Aguja de recambio: EPS-30ES

■ MESSUNGEN UND JUSTIERUNGEN ——— Deutsch

• Verwendete Geräte und Zustand des Gerätes

1. Oszilloskop
2. Gleichstrom-Voltmeter
3. Plate (SFTR007) für Justierung
4. Den Empfindlichkeits-Wahlschalter des optischen Sensors auf "M" stellen.

Schritt	Gegenstand	Vorbereitungen für die Justierung	Zu justierende Teile	Justiermethode
1	**Startposition**	1. Das Gehäuseoberteil öffnen und die Platte auflegen. 2. Den Ein/Aus-Schalter einschalten. 3. Den Startschalter drücken.	Absenkpositions-Justierschraube **(Abb. 15)**	1. Die Startposition-Justierschraube drehen. Falls er zwischen Musikstücken absenkt, die Schraube entgegen dem Uhrzeigersinn drehen.
2	**Uhrfrequenz**	1. Leistungsdraht mit Klemme an IC301, Stift 29 und Stift 1 der Betriebs-Platine anschließen. 2. Das Oszilloskop and IC301 Stift 18 anschließen.	VR301 **(Abb. 16)**	1. Den Ein/Aus-Schalter einschalten. 2. VR301 so justieren, daß der Zyklus der Ausgangswellenform 1,36 msec. ± 0,07 msec. beträgt. **(Abb. 17)**
3	**Sensorver-stärkung**	1. Gleichstrom-Voltmeter an IC401, Stift 12 (+) und Stift 14 (—) anschließen. 2. Die Platte für Justierung mit Seite A auflegen.	VR401 **(Abb. 16)**	1. Den Ein/Aus-Schalter einschalten. 2. Der Tonarm ist in der Ruheposition. (Unbespielter Teil der Platte.) 3. VR401 so abgleichen, daß die Ausgangsspannung 8V ± 0,4V verträgt.
4	**Sensor-auflösung**	1. Das Oszilloskop an IC401, Stift 9 (+) und Stift 14 (—) anschließen. 2. Die Platte für Justierung mit Seite A auflegen.	VR402 **(Abb. 16)**	1. Den Ein/Aus-Schalter einschalten. 2. Den F-Überspring-Schalter gedrückt halten, um den Tonarm zu bewegen. (Ausgangsleistung tritt auf zwischen den Musikstücken.) 3. VR402 so abgleichen, daß die maximale Ausgangsleistung zwischen den Musikstücken 3V ± 0,3V beträgt. **(Abb. 18)**
5	**Nadel-Absenkposition**	1. Das Gehäuseoberteil öffnen und den Gehäuseschalter mit Klebband in der gedrückten Stellung arretieren. 2. Die Platte für Justierung mit Seite B auflegen. 3. Das Gehäuseoberteil schließen. 4. Das Gerät an den Verstärker anschließen. (Die Lautsprecher an die Lautsprecher-Anschlüsse anschließen.)	VR302 **(Abb. 19)**	1. Den Ein/Aus-Schalter einschalten. 2. Den F-Überspring-Schalter zweimal drücken und dann die Start-Taste drücken. 3. Nach beendetem Absenken den B-Überspring-Schalter nochmals drücken, zum Zwecke des Absenkens, wie bereits erwähnt. 4. Überprüfen, daß die Absenkposition bei "18 ~ 19" liegt. 5. VR302 so justieren, daß die Absenk-position bei "18 ~ 19" auf der Skala ist.
6	**Tonarm-Spurfehlwinkel**	1. Die Staubabdeckung entfernen. (Siehe "ANLEITUNG FÜR DIE DEMONTAGE".) 2. Das Gehäuseoberteil öffnen und den Gehäuseschalte mit Klebband in der gedrückten Stellung arretieren. 3. Das Gehäuseoberteil schließen. 4. Eine Platte auflegen.	Justierschraube **(Abb. 19)**	1. Den Ein/Aus-Schalter einschalten. 2. Den F-Überspring-Schalter gedrückt halten, um den Tonarm zu bewegen. 3. Die Justierschraube so weit drehen, daß die Tonarmmitte mit der V-Kerbe der Liftstange übereinstimmt.
7	**Servo-Verstärkung und Offsetspannung**	1. Die Staubabdeckung entfernen. (Siehe "ANLEITUNG FÜR DIE DEMONTAGE".) 2. Das Gehäuseoberteil öffnen und den Gehäuseschalter mit Klebband in der gedrückten Stellung arretieren. 3. Das Gleichstrom-Voltmeter an CN301, Stift 5 (+) und Stift 2 (—) anschließen. 4. Die Sensorabdeckung entfernen.	VR501 (Servo Verstärkung) Schraube (Offset-Spannung) **(Abb. 20)**	1. Den Ein/Aus-Schalter einschalten. 2. Den F-Überspring-Schalter gedrückt halten, um den Tonarm zu bewegen. 3. Das Gehäuseoberteil öffnen. 4. Den Tonarm ganz nach links bewegen. Dann VR501 so justieren, daß die Spannung 3,6V beträgt. (Servo-Verstärkung) 5. Den Tonarm zur Mitte him stellen und überüfen, daß die Ausgangsspannung 1,8V beträgt. 6. Falls die Spannung nicht 1,8V betragt, ist die Schraube so zu justieren, daß die Ausgangsspannung 1,8V beträgt. (Offset-Spannung)

■ MESURAGES ET REGLAGES ——— Français

• Equipement utilisé et conditions de service de l'appareil

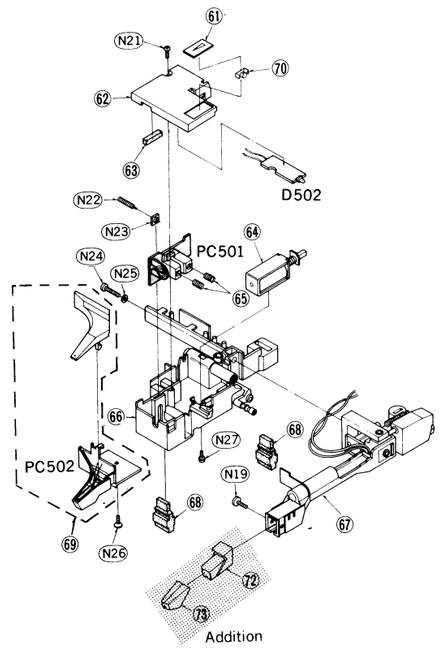
1. Oscilloscope
2. Voltmètre à C.C.
3. Disque (SFTR007) pour la mise au point
4. Régler le sélecteur de sensibilité de détecteur optique sur "M".

Etape	Artiele	Préparatifs pour la réglage	Portion du réglage	Méthode de mise au point
1	**Position de démarrage**	1. Ouvrir la boîtier supérieur et installer un disque. 2. Mettre en circuit l'interrupteur d'alimentation. 3. Appuyer sur la touche "Start" (mise en marche).	Vis d'ajustement de la position descendante. **(Fig. 15)**	1. Tourner la vis de réglage du positionnement de démarrage. Si elle descend entre les plages, la tourner dans le sens inverse des aiguilles d'une montre.
2	**Fréquences des impulsions de rythme**	1. Raccorder le fil de jonction avec attache à la broche 1 et à la broche 29 de IC301 du circuit de fonctionnement. 2. Raccorder l'oscilloscope à la broche 18 de IC301.	VR301 **(Fig. 16)**	1. Mettre en circuit l'interrupteur d'alimentation. 2. Ajuster VR301 de telle sorte que le cycle de la forme d'onde de sortie soit de 1,36 msec. ± 0,07 msec. **(Fig. 17)**.
3	**Gain du dispositif dérecteur**	1. Raccorder le voltmètre à C.C. à la broche 12 (+) et à la broche 14 (—) de IC401. 2. Installer le disque pour la mise au point avec le côté A vers le haut.	VR401 **(Fig. 16)**	1. Mettre en marche l'interrupteur d'alimentation. 2. Le bras de lecture est à la position de repos. (Zone vierge du disque.) 3. Ajuste VR401 de telle sorte que la tension de sortie soit de 8V ± 0,4V.
4	**Résolution du dispositif détecteur**	1. Raccorder l'oscilloscope à la broche 9 (+) et à la broche 14 (—) de IC401. 2. Installer le disque pour la mise au point avec le côté A vers la haut.	VR402 **(Fig. 16)**	1. Mettre en circuit l'interrupteur d'alimentation. 2. Maintenir enfoncé le commutateur de saut F pour déplacer le bras de lecture. (La puissance de sortie est déliverée entre les plages.) 3. Ajuster VR402 de telle sorte que la puissance de crête entre les plages soit de 3V ± 0,3V. (Fig. 18)
5	**Position de pose/ relevage de la pointe de lecture**	1. Ouverir le boîtier supérieur et maintenir appuyée la touche du boîtier avec une bande adhésive. 2. Installer le disque pour la mise au point avec le côté B vers le haut. 3. Refermer le boîtier supérieur. 4. Raccorder l'appareil à o'amplificateur. (Raccorder les haut-parleurs aux bornes des hautparleurs.)	VR302 **(Fig. 19)**	1. Mettre en circuit l'interrupteur d'alimentation. 2. Appuyer deux fois sur le commutateur de saut F, puis appuyer sur le commutateur de mise en route. 3. Après l'achèvement de la pose/relevage, appuyer à nouveau sur le commutateur de saut B en vue de la pose, comme il a été mentionné auparavant. 4. S'assurer que la position descendante est au comptage de "18 ~ 19". 5. Régler VR302 de telle sorte que la position descendante soit au comptage de "18 ~ 19".
6	**Angle de décalage du bras de lecture**	1. Retirer le couvercle protège-poussière. (Se référer aux "INSTRUCTIONS POUR LE DÉMONTAGE".) 2. Ouvrir la boîtier supérieur et maintenir appuyée la touche du boîtier avec une bande adhésive. 3. Refermer le boîtier supéreur. 4. Installer un disque.	Vis de réglage **(Fig. 19)**	1. Mettre en circuit l'interrupteur d'alimentation. 2. Maintenir enfoncé le commutateur de saut F pour déplacer le bras de lecture. 3. Tourner la vis de réglage de façon à ce que le centre de bras cincide avec la rainure en V de la tige d'élévation.
7	**Amplification servo-mécanique et tension d'écart de réglage**	1. Retirer le couvercle protège-poussière. (Se référer aux "INSTRUCTIONS POUR LE DÉMONTAGE".) 2. Ouvrir le boîtier supérieur et maintenir appuyée la touche du boîtier avec une bande adhésive. 3. Raccorder le voltmètre à C.C. à la broche 5 (+) et à la broche 2 (—) de CN301. 4. Retirer le couvercle du dispositif détecteur.	VR501 (Amplification servo-mécanique) Plaquette à Vis. (Tension de décalage) **(Fig. 20)**	1. Mettre en circuit l'interrupteur d'alimentation. 2. Maintenir enfoncé le commutateur de saut F pour déplacer le bras de lecture. 3. Ouvrir le boîtier supérieur. 4. Déplacer complètement le bras de lecture vers la gauche. Puis, ajuster VR501 de telle sorte que la tension soit de 3,6V. (Amplification servo-mécanique) 5. Régler le bras de lecture au centre et s'assurerque la tension de sortie soit de 1,8V. 6. Si la tension n'est pas de 1,8V, ajuster la vis de telle sorte que la tension de sortie soit de 1,8V. (Tension de décalage)

Ref. No.	Change of Part No. SL-J2 [M] → SL-J2 / (K)		Part Name & Description	Per Set (Pcs.)	Remarks
CABINET and CHASSIS PARTS					
25	SFNNJ02M01	SFNNJ02S01 [E, EC]	Name Plate	1	
		SFNNJ02G01 [EK]	Name Plate	1	
		SFNNJ02X01 [XA, XM]	Name Plate	1	
		SFNNJ02L01 [XL]	Name Plate	1	
		SFNNJ02R01 [Other areas]	Name Plate	1	
TONEARM PARTS					
71	SFPABJ0204A	Deletion	----------	0	
72	Addition	EPC-P30S	Cartridge	1	
73	Addition	EPS-30ES	Stylus	1	
ACCESSORIES					
A1	SFNUJ02M01	SFNUJ02I01 [Ei]	Instruction Book	1	
		SFNUJ02G01 [EK]	Instruction Book	1	
		SFNUJ02R01 [EG]	Instruction Book	1	
		SFNUJ02F01 [EF]	Instruction Book	1	
		SFNUJ02X01 [XL, XA, XM]	Instruction Book	1	
		SFNUJ02S01 [Other areas]	Instruction Book	1	
A4	SFDAC05M01	SFDAC05G02 [EK]	AC Cord	1	⚠
		SFDAC05L01 [XL]	AC Cord	1	⚠
		SFDAC05X02 [XA, XM]	AC Cord	1	⚠
		SFDAC05E02 [Other areas]	AC Cord	1	⚠
A5	Addition	SFDKI19118 [XA, XM] only	2 Pin Plug	1	⚠
PACKING PARTS					
P1	SFHPJ02M01	SFHPJ02C01 [EF] only	Carton Box, (Silver)	1	○
		SFHPJ02M01 [Other areas]	Carton Box, (Silver)	1	○
		SFHPJ02C21 [EF] only	Carton Box, (Black)	1	Ⓚ
		SFHPJ02M21 [Other areas]	Carton Box, (Black)	1	Ⓚ

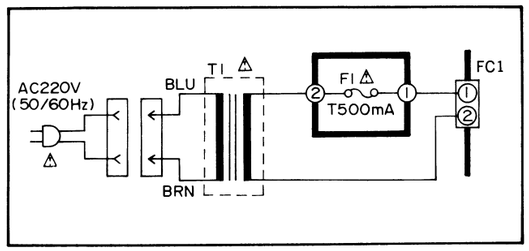
■ EXPLODED VIEW

- **Tonearm part**

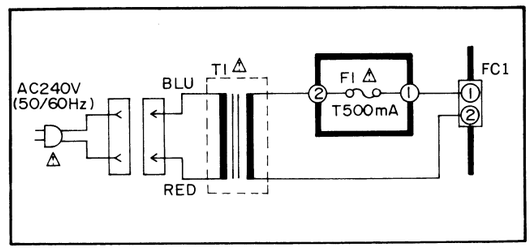


■ SCHEMATIC DIAGRAM

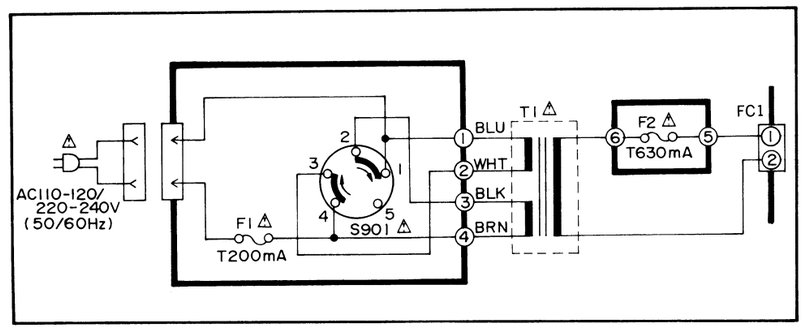
※ **Product for continental Europe**



※ **Product for Australia.**



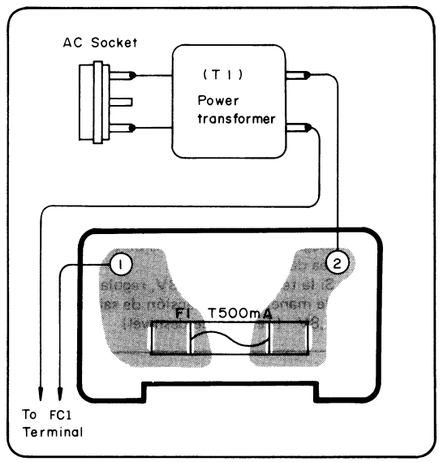
※ **Product for United Kingdom, Southeast Asia, Oceania, Africa, Middle Near East and Central South America.**



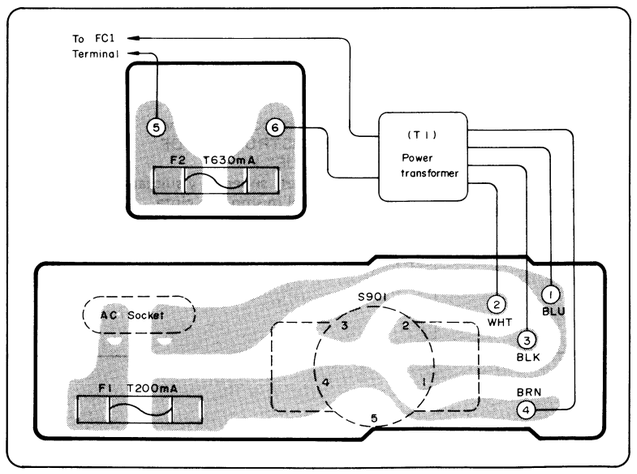
■ PRINTED CIRCUIT BOARD

- **Power source circuit**

※ **Product for Continental Europe and Australia.**



※ **Product for United Kingdom, Southeast Asia, Oceania, Africa, Middle Near East and Central South America.**



■ MEDICIONES Y AJUSTE ——— Español

• Equipos usados y estado del aparato

1. Oscilloscopio
2. Voltímetro de corriente continua
3. Disco (SFTR007) de ajuste
4. Poner el selector de sensibilidad del sensor óptico en "M".

Paso	Punto tratado	Preparativos para el ajuste	Porción a ajustar	Manera de hacer el ajuste
1	**Posición de arranque**	1. Abrir el gabine superior y colocar el disco. 2. Encender el interruptor de la corriente. 3. Empujar el interruptor de arranque ("Start").	Tornillo de regulación de la posición de descenso **(Fig. 15)**	1. Hacer girar el tornillo de regulación de la posición de descenso. Si se deposita en medio de una pieza, girar el tornillo hacia la izquierda.
2	**Frecuencia del reloj**	1. Conectar el hilo conductor con clip a 29 pernos y 1 perno de IC301 de tablero de circuitos de operación. 2. Conectar el osciloscopio al pasador 18 de IC301.	VR301 **(Fig. 16)**	1. Encender el interruptor de la corriente. 2. Regular VR301 de manera que el ciclo de forma de onda de salida sea 1,36 mseg. ± 0,07 mseg. **(Fig. 17)**
3	**Ganancia del sensor**	1. Conectar el voltímetro de CC a 12 pernos (+) y 14 pernos (—) de IC401. 2. Colocar el disco de ajuste con el lado A mirando hacia arriba.	VR401 **(Fig. 16)**	1. Encender el interruptor de la corriente. 2. El brazo sonoro está en la posiciónde descanso. (Area negra del disco.) 3. Regular VR401 de manera tel que la tensión de salida sea de 8V ± 0,4V.
4	**Rasolución del sensor**	1. Conectar el osciloscopio a 9 pernos (+) y 14 pernos (—) de IC401. 2. Colocar el disco de ajuste con el lado A mirando hacia arriba.	VR402 **(Fig. 16)**	1. Encender el interruptor de la corriente. 2. Mantener el interruptor de salto F oprimido para mover el brazo sonoro. (La salida se suministra entre las piezas.) 3. Regular VR402 de manera tal que la salida de cresta entre las piezas sea de 3V ± 0,3V. **(Fig. 18)**
5	**Posición de descenso de aguja.**	1. Abrir el gabinete superior y sujetar el interruptor del mismo con cinta. 2. Colocar el disco de ajuste con el lado B mirando hacia arriba. 3. Cerrar el gabinete superior. 4. Conectar el aparato al amplificador. (Conectar los altoparlantes a los bornes para conexión de los mismos.)	VR302 **(Fig. 19)**	1. Encender el interruptor de la corriente. 2. Apretar el interruptor de salto F dos veces y luego apretar el interruptor de arranque. 3. Después de completar el descenso, de nuevo apretar el interruptor de salto B con el fin de descenso como mencionado previamente. 4. Asegurarse de que la posición de descenso se encuentre el el número "18 ~ 19". 5. Regular VR302 de manera que la posición de descenso esté en conteo "18 ~ 19".
6	**Angulo de descentramiento del brazo sonoro**	1. Remover la tapa contra el polvo. (Referir a "INSTRUCCION DE DESMONTAJE".) 2. Abrir el gabinete superior y sujetar el interruptor del mismo con cinta. 3. Cerrar el gabinete superior. 4. Colocar el disco.	Tornillo de ajuste **(Fig. 19)**	1. Encender el interruptor de la corriente. 2. Mantener el interruptor de salto F oprimido para mover el brazo sonoro. 3. Girar el tornillo de ajuste de manera tal que el centro del brazo concuerde con la ranura en V de la barra de elevación.
7	**Canancia del sarvomecanismo y tensión de desnivel**	1. Remover la tapa contra el polvo. (Referir a "INSTRUCCION DE DESMONTAJE".) 2. Abrir el gabinete superioy y sujetar el interruptor del mismo con cinta. 3. Conectar el voltímetro de CC a 5 pernos (+) y 2 pernos (—) de CN301. 4. Remover la cubierta de sensor.	VR501 (Ganancia del servomecanismo) Tornillo (Tensión de desnivel) **(Fig. 20)**	1. Encender el interruptor de la corriente. 2. Mantener el interruptor de salto F oprimido para mover el brazo sonoro. 3. Abrir el gabinete superior. 4. Mover completamente el brazo sonoro a la izquierda. Luego, regular VR501 de manera que la tensión sea 3,6V. (Ganancia del servomecanismo.) 5. Colocar el brazo sonoro en el centro y asegurarse de que la tension de salida sea de 1,8V. 6. Si la tensión no es 1,8V, regular el tornillo de manera que la tensión de salida sea 1,8V. (Tensión de desnivel)

CHANGES

■ REPLACEMENT PARTS LIST

Notes:

1. Mentioned in this parts list are only those changed in Model No. SL-J2 for destination [M] area.
2. Important safety notice:
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. The "Ⓢ" mark is service standard parts and may differ from production parts.
4. Ⓚ-marked parts are used for black only, while ○-marked parts are for silver type only.
5. Parts other than Ⓚ-and ○-marked are used for both black and silver types.
6. This replacement parts list contains the main parts changed from those of former types. For the detailed replacement parts list, refer to pages 11, 12.

Areas

- * [E] is available in Switzerland and Scandinavia.
- * [EK] is available in United Kingdom.
- * [XL] is available in Australia.
- * [EG] is available in F.R. Germany.
- * [EB] is available in Belgium.
- * [EH] is available in Holland.
- * [EF] is available in France.
- * [Ei] is available in Italy.
- * [EC] is available in Czechoslovakia.
- * [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
- * [XM] is available in Central South America.

Black type model No. : SL-J2 (K)

Ref. No.	Change of Part No. SL-J2 [M] → SL-J2 / (K)		Part Name & Description	Per Set (Pcs.)	Remarks
SWITCH					
S901	Addition	SFDSHXW225–2 [EK, XA and XM areas]	Voltage selector	1	⚠
PHOTO INTERRUPTOR					
PC502	SFPABJ0204A	SFPABJ0205R	Blank Groove Sensor Ass'y	1	
POWER TRANSFORMER					
T1	SLT48DTL3A	SLT57DT7E [EK, XA and XM areas]	Power Source	1	⚠
		SLT48DTE13E [XL]	Power Source	1	⚠
		SLT48DT10E [Other areas]	Power Source	1	⚠
FUSES					
F1	Addition	XBA2C02T1B [EK, XA and XM areas]	250V, T200mA	1	⚠
		XBA2C05T1B [Other areas]	250V, T500mA	1	⚠
F2	Addition	XBA2C06T1B [EK, XA and XM areas]	250V, T630mA	1	⚠
CABINET and CHASSIS PARTS					
1	SFADJ02M01E	SFADJ02M01E	Dust Cover (Silver)	1	○
		SFADJ02M21E	Dust Cover (Black)	1	Ⓚ
2	SFUMQ06N08	SFUMQ06N08	Latch, Dust Cover (Silver)	2	○
		SFUMQ06N22	Latch, Dust Cover (Black)	2	Ⓚ
3	SFUMD04N07	SFUMD04N07	Latch, Dust Cover (Silver)	2	○
		SFUMC02N14	Latch, Dust Cover (Black)	2	Ⓚ
4	SFGZQ06N01	SFGZQ06N01	Rubber, Latch (Silver)	2	○
		SFGZC02N01	Rubber, Latch (Black)	2	Ⓚ
15	SFKKJ02N01	SFKKJ02S01	Ornament Plate (Silver)	1	○
		SFKKJ02S21	Ornament Plate (Black)	1	Ⓚ
16	SFUMJ02N01	SFUMJ02N01	Front Panel (Silver)	1	○
		SFUMJ02N21	Front Panel (Black)	1	Ⓚ
18	SFACJ02N01	SFACJ02N01	Cabinet (Silver)	1	○
		SFACJ02N21	Cabinet (Black)	1	Ⓚ
22	SFGCQ06N02	SFGCQ06X01 [EK, XA and XM areas]	Cushion Rubber, Power Transformer	2	
		SFGCQ06N02 [Other areas]	Cushion Rubber, Power Transformer	2	
23	SFDJHSC0491	SFDJHSC0491 [XL]	AC Socket	1	⚠
		SFDJHSC04912 [XA, XM]	AC Socket	1	⚠
		SFDJHSC0516 [Other areas]	AC Socket	1	⚠

■ REPLACEMENT PARTS LIST

Notes:

1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
4. The "Ⓢ" mark is service standard parts and may differ from production parts.
5. The parenthesized numbers in the columns of description stand for the quantity per set.
6. Ⓚ-marked parts are used for black only, while ○-marked parts are for silver type only.
7. Parts other than Ⓚ-and ○-marked are used for both black and silver types.

Areas

* [E] is available in Switzerland and Scandinavia.
* [EK] is available in United Kingdom.
* [XL] is available in Australia.
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* [EF] is available in France.
* [Ei] is available in Italy.
* [EC] is available in Czechoslovakia.
* [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
* [XM] is available in Central South America.

Black type model No. : SL-J2 /(K)

Ref. No.	Part No.	Description
INTEGRATED CIRCUITS		
IC1	AN7812	Regulator,12V
IC101	AN6638	Turntable Drive
IC201	AN6683	Turntable Control
IC301	MN1420FPL	Micro Computor
IC302	AN6914	Comparator
IC401	AN6690	Arm Motor Drive & Blank Groove Detection
TRANSISTORS		
Q1	2SC1383	Regulator,5V
Q301	2SD636	LED Drive
Q302	2SD892	Cueing Control
Q303,304	2SD636	Speed Selector & Synchro Rec Drive
Q305~307	2SB641	Switching
Q308	2SD636	Relay Drive
Q309,310	2SB641	Shaping
Q311	2SD636	LED Drive
Q312	2SB641	Switching
DIODES		
D1 ⚠	SVDS1RBA20Z	Rectifier
D5	MA4056	Zener,5.6V
D301~306	MA165	Switching
D307	SVDZJ02N02	Repeat Indicator
D308	MA4075	Zener,7.5V
D309	SVDZJ02N03	Cue-down Indicator
D310	SVDZJ02N02	Cue-Up Indicator
D311~317	MA165	Switching
D311B	LN513RA	Music Select Indicator
D401	MA4068	Zener,6.8V

Ref. No.	Part No.	Description
D501 Ⓢ	MA162A	Switching
D502	SVDEBR3432S	Tonearm Position Indicator
D701 Ⓢ	MA162A	Switching
SWITCHIES		
S1 ⚠	SFDSC02N02	Power
S301~306	EVQQS405K	Stop,Start,Skip-Search, Cueing &Repeat
S307	SFDSC05N01	Reset
S308,309	SFDSHSW0699	Size Selector & Speed Selector
S401	SFDSHSW0699	Sensor Gain Selector
S601	SFDSC02N03	Rest
S901 ⚠ [EK,XA,XM]	SFDSHXW225-2	Voltage Selector
VARIABLE RESISTORS		
VR301	EVN61AA00B54	Clock Frequency Adj,50KΩ(B)
VR302	EVJE1AF20B54	Stylus Cue-down Position Adj,50KΩ(B)
VR401	EVN61AA00B55	Sensor Gain Adj,500KΩ(B)
VR402	EVN61AA00B25	Sensor Resolution Adj., 200KΩ(B)
VR501	EVNM0AA00B14	Servo Gain Adj.,10KΩ(B)
RELAY		
RL701	SFDYQ11N02	Muting Relay
RL701	SFDYG5A237P	Muting Relay
CRYSTAL		
X201	SVQSH41TR	4.193MHz

Ref. No.	Part No.	Description
HALL ELEMENTS		
H101,102	0H-002	Turntable Position Det.
PHOTO INTERRUPTERS		
PC501	0N1186	Offset Angle Sensor
PC502	SFPABJ0205R	Blank Groove Sensor
PC601	0N1161	Tonearm Position Sensor
POWER TRANSFORMER		
T1 [EK,XA,XM] ⚠	SLT57DT7E	Power Source
T1 [XL] ⚠	SLT48DTE13E	Power Source
T1 [other areas] ⚠	SLT48DT10E	Power Source
FUSE		
F1 [EK,XA,XM] ⚠	XBA2C02T1B	250V,T200mA
F1 [other areas] ⚠	XBA2C05T1B	250V,T500mA
F2 [EK,XA,XM] ⚠	XBA2C06T1B	250V,T630mA
COMPONENT COMBINATION		
RX301	EXBP87681J	680Ω×7

Ref. No.	Part No.	Description
CABINET AND CHASSIS PARTS		
1 ○	SFADJ02M01E	Dust Cover Ass'y (Silver) (1)
1 Ⓚ	SFADJ02M21E	Dust Cover Ass'y (Black) (1)
1—1	SFKBJ02M01	Badge,Dust Cover (1)
1—2	SFGZJ02N01	Cushion Rubber, Dust Cover (2)
2 ○	SFUMQ06N08	Lutch,Dust Cover (Silver) (2)
2 Ⓚ	SFUMQ06N22	Lutch,Dust Cover (Black) (2)
3 ○	SFUMD04N07	Lutch,Dust Cover (Silver) (2)
3 Ⓚ	SFUMC02N14	Lutch,Dust Cover (Black) (2)
4 ○	SFGZQ06N01	Rubber,Dust Cover (Silver) (2)
4 Ⓚ	SFGZC02N01	Rubber,Dust Cover (Black) (2)
5	SFTGQ06N01	Turntable Mat (1)
6	SFWEC06N01	Adaptor,45r.p.m (1)
7	SFQAC06N01	Spring,45r.p.m Adaptor (1)

Ref. No.	Part No.	Description
8	SFTEQ05N01	Turntable Platter (1)
9	SFTMC07-01E	Rotate Magnet (1)
10	SFAUJ02N01	Bottom Board (1)
11	SFQCC05N01	Spring,Insulator (4)
12	SFGAC05N02	Insulator (4)
13	SFUMJ02N02	Rod,Power Switch (1)
14	SFUMJ02N03	Filter,Front Panel (1)
15 ○	SFKKJ02S01	Ornament Plate (Silver) (1)
15 Ⓚ	SFKKJ02S21	Ornament Plate (Black) (1)
16 ○	SFUMJ02N01	Front Panel(Silver) (1)
16 Ⓚ	SFUMJ02N21	Front Panel(Black) (1)
17	SFKTC06N04	Button,Power Switch (1)
18 ○	SFACJ02N01	Cabinet(Silver) (1)
18 Ⓚ	SFACJ02N21	Cabinet(Black) (1)
19	SFKTJ02N01	Button,Operation (1)
20	SFKTJ02N02	Knob,Selectors (3)
21	SFDJC01N01	Jack,Synchro Rec (1)

Ref. No.	Part No.	Description
22 [EK,EX,XM]	SFGCQ06X01	Cushion Rubber,Power Transformer (2)
22 [other areas]	SFGCQ06N02	Cushion Rubber, Power Transformer (2)
23 [XL] ⚠	SFDJHSC0491	AC Socket (1)
23 [XA,XM] ⚠	SFDJHSC04912	AC Socket (1)
23 [other areas] ⚠	SFDJHSC0516	AC Socket (1)
24	SFATQ06N01E	Hinge (2)
25 [E,EC]	SFNNJ02S01	Name Plate (1)
25 [EK]	SFNNJ02G01	Name Plate (1)
25 [XA,XM]	SFNNJ02X01	Name Plate (1)
25 [XL]	SFNNJ02L01	Name Plate (1)
25 [other areas]	SFNNJ02R01	Name Plate (1)
26	SFGKQ06N01	Rubber Cap (1)
27	SFUML11R03	Wheel,Tonearm Drive (1)
28	SFUZC05N02E	Rope Ass'y, Tonearm Drive (1)
29	SFUMV05N23	Cap,Pulley (1)
30	SFUMC05N22	Pulley (1)
31	SFGBC10-01	Belt,Tonearm Drive Motor (1)

SL-J2

Ref. No.	Part No.	Description	
32	SFMHJ02N01E	Motor Ass'y, Tonearm Drive	(1)
33	SFUMQ06N06A	Worm Grear Ass'y	(1)
34	SFUZC02N01	Rod,Rest Switch	(1)
35	SFUMC02N05	Lever,Rest Switch	(1)
36	SFQHQ34N22	Spring,Rest Switch Lever	(1)
37	SFUMC02N06	Base,Rest Switch	(1)
38	SFUMQ06N09	Holder,Rest Switch	(1)
39	SFUPBL3N11E	Base,Tonearm Drive Motor	(1)
40	SFUMC02N10	Rope Guide	(1)
41	SFQA913-01	Spring,Adjustment Screw	(1)
42	SFUMQ06N07	Clamper,Guide Rail	(1)
43	SFGCQ06N01	Cushion Rubber, Guide Rail	(1)
44	SFXJQ06N01	Guide Rail,Tonearm	(1)
45	SFGCC05N05	Cushion Rubber, Guide Rail	(1)
46	SFUMC02N12	Clamper,Lead Wires	(1)
47	SFGCQ06N04	Cushion Rubber, Dust Cover	(2)
48	SFGZBL3N02	Spacer	(1)
49	SFUMC05N15	Holder,Reset Switch	(1)
50	SFQPC05N01	Spring,Reset Switch	(1)
52	SFKTQ06N02	Knob,Cueing Down Position Control	(1)
53	SFDJJ02N04E	Jack,Phono Output	(1)
54	SFUKQ06N02E	Base Ass'y,Tonearm	(1)
55	SFMGQ34N01	Cover, Stator Coil	(1)
56	SFMZC06N01R	Stator Frame Ass'y	(1)
TONEARM PARTS			
61	SFPAK0Q601	Indicator Plate	(1)
62	SFPCS0Q601	Indicator Cover	(1)
63	SFPGM0Q601	Rubber	(1)
64	SFDZC05N01E	Solenoid Ass'y	(1)
65	SFPSP00302	Spring,Adjustment	(1)

Ref. No.	Part No.	Description	
66	SFPKD00301R	Base,Tonearm	(1)
67	SFPAMJ0201A	Tonearm Ass'y	(1)
68	SFPGML1101	Cushion Rubber	(2)
69	SFPABJ0205R	Blank Groove Sensor A'ssy (PC502)	(1)
70	SFPCS00502	Light Concentrator	(1)
72	EPC-P30S	★Cartridge	(1)
73	EPS-30ES	★Stylus	(1)
SCREWS,WASHERS AND NUT			
N1	Ⓢ XTV3+8BFN	Screw,⊕3×8	(12)
N2	Ⓢ XTV3+6BFZ	Screw,⊕3×6	(6)
N3	Ⓢ XSN3+5S	Screw,⊕3×5	(3)
N4	XTW3+14QFYR	Screw,⊕3×14	(4)
N5	Ⓢ XTN3+6B	Screw,⊕3×6	(1)
N6	XTWS3+14TFZ	Screw,⊕3×14	(2)
N7	XTN16+10G	Screw,⊕1.6×10	(1)
N9	XTV3+20J	Screw,⊕3×20	(1)
N10	SFXGQ06N01	Screw	(1)
N11	XSN3+30S	Screw,⊕3×30	(1)
N12	Ⓢ XWE3D10	Washer, φ3	(1)
N13	Ⓢ XWE3A8BW	Washer, φ3	(2)
N14	CSTW3	Washer	(2)
N15	Ⓢ XWC3B	Washer, φ3	(1)
N16	Ⓢ XWC26B	Washer, φ2.6	(1)
N17	XNC3HS	Nut, φ3	(1)
N18	SFXWC06N02	Washer	(1)
N19	SFPEV0Q601	Screw,Cartridge	(1)
N20	Ⓢ XTV3+6BFN	Screw,⊕3×6	(6)
N21	XTN23+6JFZ	Screw,⊕2.3×6	(1)
N22	SFPTN00301	Screw,Offset Adj.	(1)
N23	SFXN623—1	Nut	(1)
N24	Ⓢ XSN3+12S	Screw,⊕3×12	(1)
N25	Ⓢ XWA3B	Washer, φ3	(1)
N26	XTS26+6JFZ	Screw,⊕2.6×6	(1)
N27	XYN2+C4FZ	Screw,⊕2×4	(1)
N28	XTN2+8B	Screw,⊕2+8	(1)
ACCESSORIES			
A1 (Ei)	SFNUJ02I01	Insturction Book	(1)

Ref. No.	Part No.	Description	
A1 (EK)	SFNUJ02G01	Insturction Book	(1)
A1 (EG)	SFNUJ02R01	Insturction Book	(1)
A1 (EF)	SFNUJ02F01	Insturction Book	(1)
A1 (XL,XA,XM)	SFNUJ02X01	Insturction Book	(1)
A1 (other areas)	SFNUJ02S01	Insturction Book	(1)
A2	SFDHC05N01	Phono Output Cord	(1)
A3	SFDLJ02N01	Ground Wire	(1)
A4 (EK) ⚠	SFDAC05G02	AC Cord	(1)
A4 (XL) ⚠	SFDAC05L01	AC Cord	(1)
A4 (XA, XM) ⚠	SFDAC05X02	AC Cord	(1)
A4 (other areas) ⚠	SFDAC05E02	AC Cord	(1)
A5 (XA, XM only) ⚠	SFDKI19118	2Pin Plug	(1)
PACKING PARTS			
P1 (EF) ◯	SFHPJ02C01	Carton Box(Silver)	(1)
P1 (other areas) ◯	SFHPJ02M01	Carton Box(Silver)	(1)
P1 (EF) Ⓚ	SFHPJ02C21	Carton Box(Black)	(1)
P1 (other areas) Ⓚ	SFHPJ02M21	Carton Box(Black)	(1)
P2	SFHHJ02N01	Pad,Front	(1)
P3	SFHHJ02N02	Pad,Rear	(1)
P4	SFHKC05N01	Clamper,Turntable Platter	(2)
P5	SFHKQ06N01	Spacer,Tonearm	(1)
P6	SFHSC06N01	Spcer,Dust Cover	(1)
P7	SFYH45×60	Polyethylene Bag,Unit	(1)
P8	SFHDN05M01	Sheet	(1)
P9	SFYF33B35	Polyethylene Bag, Turntable Mat	(1)
P10	SFHDD04N01	Pad,Turntable Mat	(1)
P11	SFYH17×16	Polyethylene Bag, Accessories	(1)

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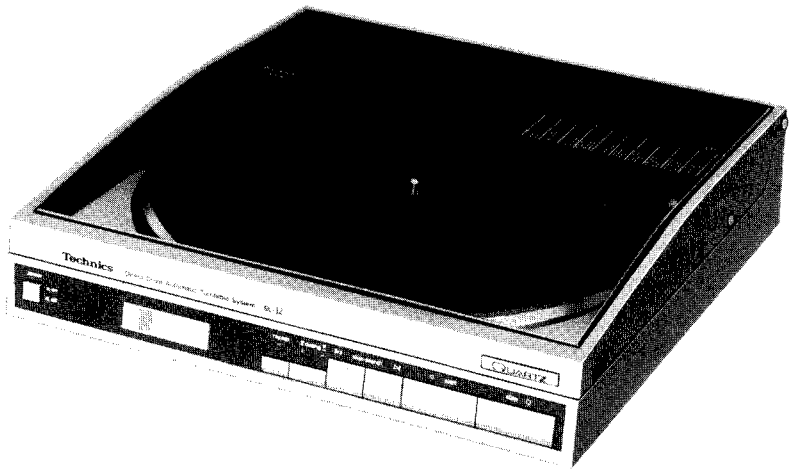
A2

Service Manual

Quartz Direct Drive Fully Automatic Turntable System

SL-J2

[M], [MC]



T4P is the standard mark for the "P-mount" plug-in-connector system. Products carrying this mark are inter-changeable and compatible with each other.

*** The cartridge shown here is an option.**

Areas

* [M] is available in U.S.A.
* [MC] is available in Canada.

Specifications

Specifications are subject to change without notice further improvement.
Weight and dimensions shown are approximate.

■ General

Power supply:	120 V AC, 60 Hz
Power consumption:	10 W
Dimensions: (W × H × D)	31.5 × 8.8 × 31.5 cm (12-1/2" × 3-1/2" × 12-1/2") (Maximum height when dust cover is open.) 39 cm (15-23/64")
Weight:	4.3 kg (9.5lb.)

■ Turntable section

Type:	Quartz direct drive Fully automatic turntable
Features:	Auto start/Auto lead-in Auto return Auto stop Repeat play Direct music select play Forward and backward skip play Forward and backward search play Auto size select Record presence detection
Drive method:	Direct drive
Motor:	Brushless DC motor
Drive control method:	Quartz-phase-locked control
Turntable platter:	Aluminum die-cast Diameter 30 cm (12")
Turntable speeds:	33-1/3 rpm and 45 rpm Auto speed select (Manual selection possible)
Wow and flutter:	0.012% WRMS* 0.025% WRMS (JIS C5521) ±0.035% peak (IEC 98A Weighted)

*Measured by obtaining signal from built-in frequency generator of motor assembly.

Rumble:	−56 dB (IEC 98A Unweighted) −78 dB (IEC 98A Weighted)

■ Tonearm section

Type:	Linear tracking tonearm 4-pivot gimbal suspension
Effective length:	10.5 cm (4-1/8")
Tracking error angle:	Within ±0.1°
Effective mass:	9 g (including cartridge)
Resonance frequency:	12 Hz
Tonearm drive motor:	DC motor
Phono cable capacitance:	150 pF

Technics

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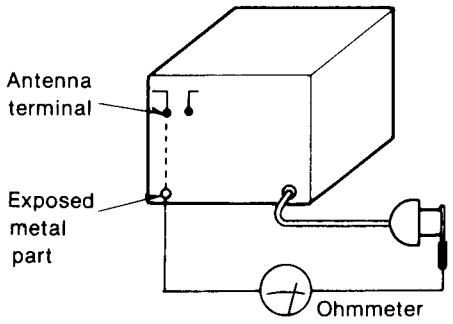
■ SAFETY PRECAUTION

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

• INSULATION RESISTANCE TEST

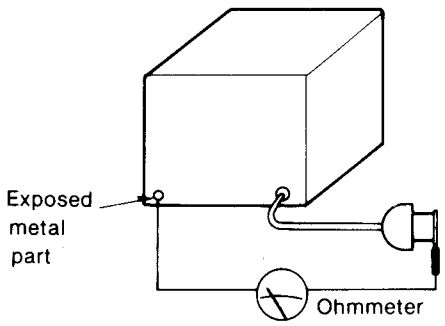
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3MΩ and 5.2MΩ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



(Fig. A)

Resistance = 3MΩ—5.2MΩ

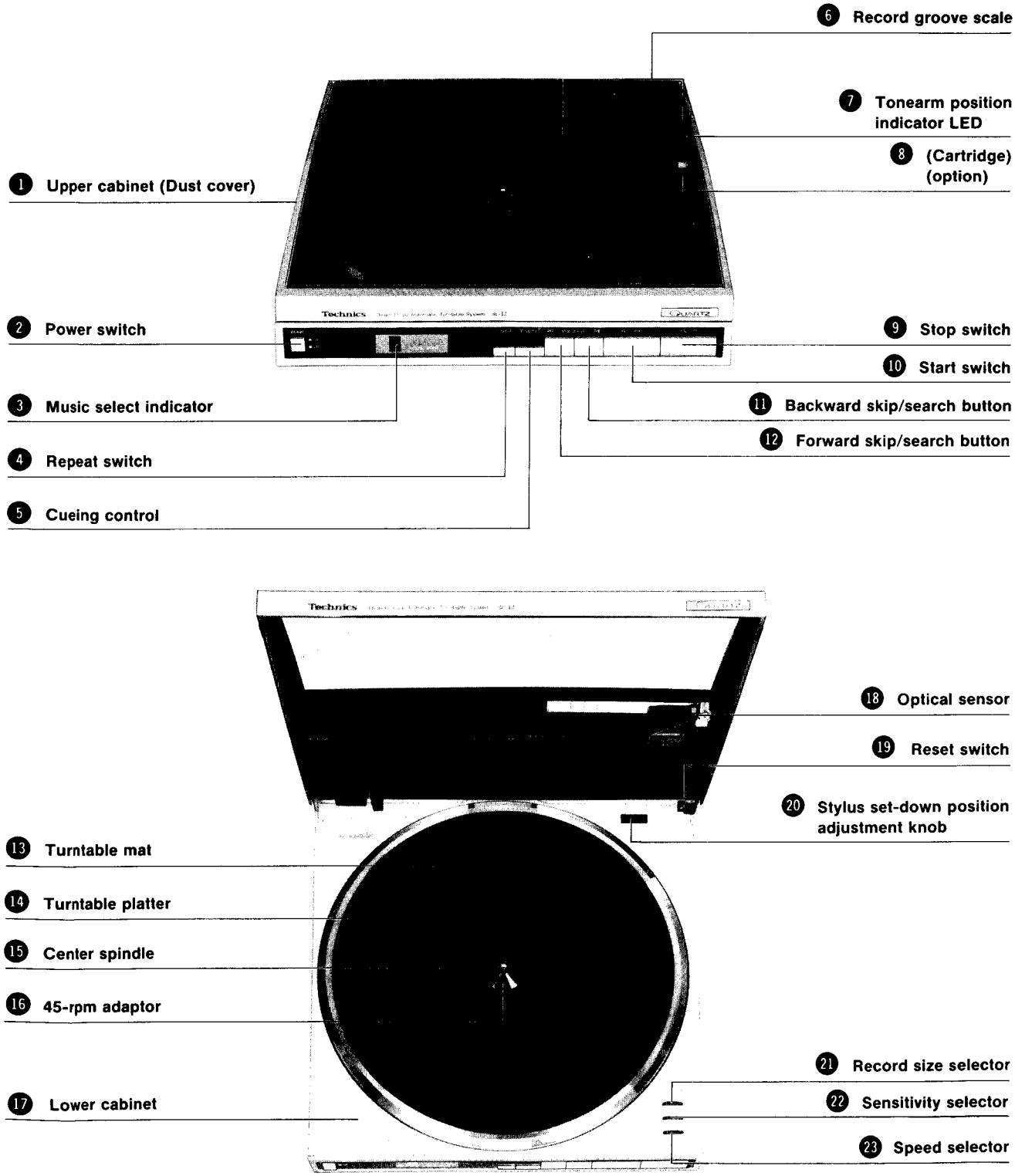


(Fig. B)

Resistance = Approx ∞

4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

■ LOCATION OF CONTROLS



■ DISASSEMBLY INSTRUCTIONS

• How to remove the cartridge

1. Open the upper cabinet.
2. Down the tonearm by finger in order to make cueing down position.
3. Remove the cartridge setscrew (**Fig. 1:** ❶), and pull out the cartridge.

Note: When attaching the cartridge again, match the tonearm connector with the cartridge pins, then completely insert it and tighten the screw.

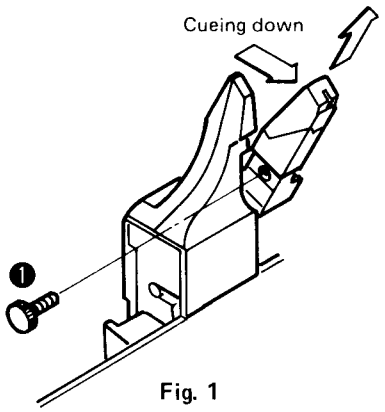


Fig. 1

• How to remove the turntable platter

1. Open the upper cabinet.
2. Remove the turntable mat, and lift the turntable platter. (**Fig. 2**)

Note:

(1) When removing the turntable platter, it is not necessary to remove the 45 r.p.m. adaptor.

(2) The turntable platter is tight fitted on to the center spindle. When removing the turntable platter, take care not to give damage to the upper cabinet, arm motor cover and tonearm cover.

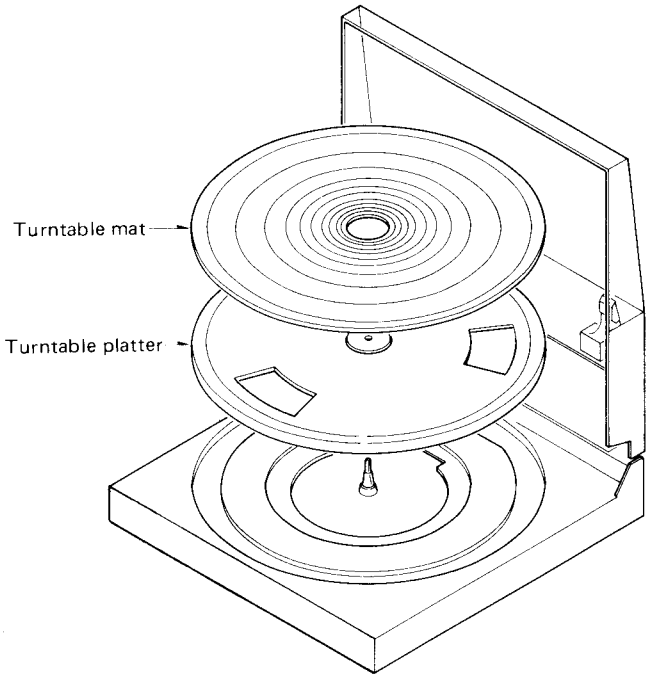


Fig. 2

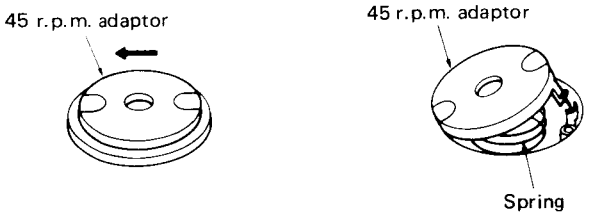


Fig. 3

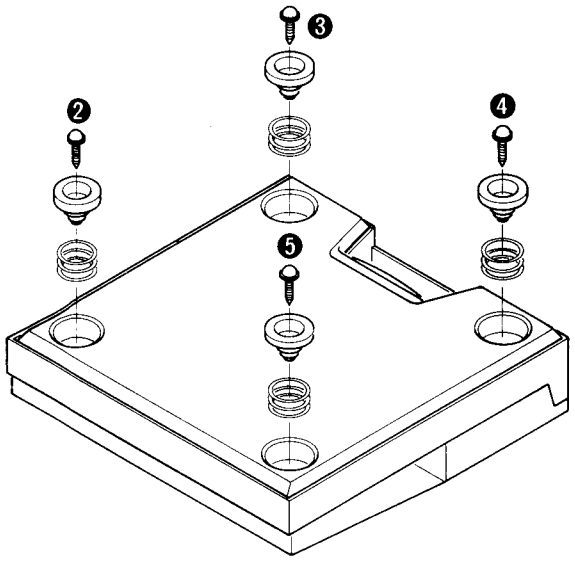


Fig. 4

• How to remove the 45 r.p.m. adaptor (Fig. 3)

1. Remove the turntable platter. (**Refer to "How to remove the turntable platter".**)
2. Turn the 45 r.p.m. adaptor counter clockwise to raise it from the turntable platter surface.
3. Push the claw by the blade screwdriver in the direction of the arrow, then remove the 45 r.p.m. adaptor.

Note: When removing the 45 r.p.m. adaptor, remove the turntable platter, otherwise the 45 r.p.m. adaptor claws will be broken.

• How to remove the bottom board

1. Remove the turntable platter. (**Refer to "How to remove the turntable platter".**)
2. Close the upper cabinet and turn over the unit on a soft cloth taking care not to damage the upper cabinet.
3. Remove the 4 bottom board setscrews. (**Fig. 4:** ❷ ~ ❺).

• How to remove the main circuit board

1. Remove the bottom board. **(Refer to "How to remove the bottom board.")**
2. Remove the select switch holder setscrew **(Fig. 5 : ❻)** and the select switch holder. **(Fig. 5)**
3. Remove the 4 main circuit board setscrews **(Fig. 6 : ❼ ~ ❿)**
4. Pull out the power switch rod from the power switch in the direction of the arrow. Then, lift the main circuit board in the direction of the arrow.

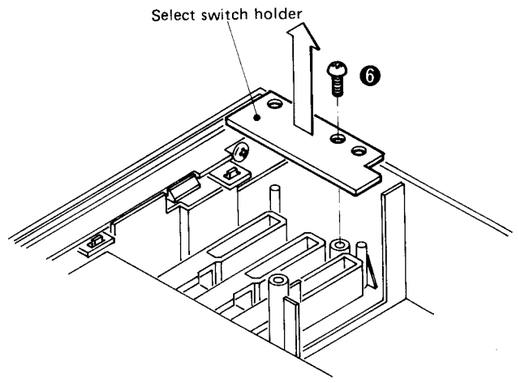


Fig. 5

• How to remove the operation button

1. Remove the main circuit board. **(Refer to "How to remove the main circuit board.")**
2. Remove the 2 connectors **(Fig. 6 :** CN302 and CN304), and then, lift the front panel. **(Fig. 6)**
3. Remove the 3 operation circuit board setscrews **(Fig. 7 : ⓫ ~ ⓭)**.
4. Release the 5 claws, then the operation circuit board can be removed. **(Fig. 7)**
5. Release the 4 claws and gently pull the operation button. **(Fig. 7)**

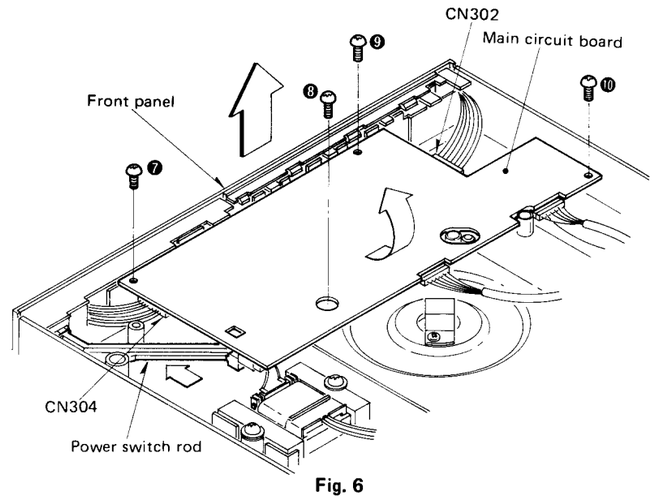


Fig. 6

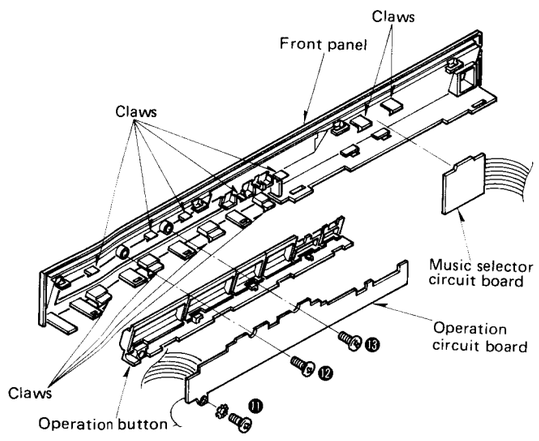


Fig. 7

• How to remove the music select circuit board

1. Remove the front panel. **(Refer to "How to remove the operation button", item 2.)**
2. Release the 2 claws, then the music select circuit board can be removed. **(Fig. 7)**

• How to remove the stator frame and drive circuit board

1. Remove the main circuit board. **(Refer to "How to remove the main circuit board.")**
2. Remove the 3 stator frame setscrews **(Fig. 8: ⓰ ~ ⓲)** and the 2 drive circuit board setscrews **(Fig. 8: ⓳, ⓴)**.
3. Cut off the stopper by nippers and remove the 4 setscrews **(Fig. 9: ㉑ ~ ㉔)** to separate the stator frame and drive circuit board.

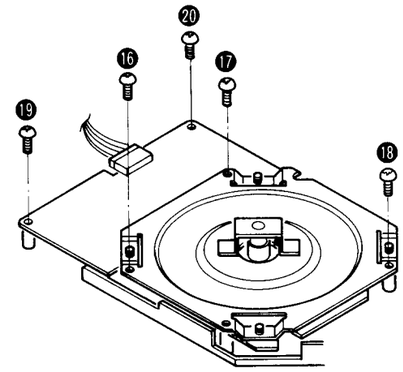


Fig. 8

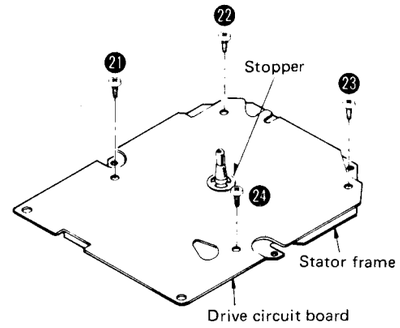


Fig. 9

• How to remove the reset switch

1. Remove the bottom board. **(Refer to "How to remove the bottom board")**
2. Remove the switch holder setscrew **(Fig. 10: ㉕)**.
3. Release the 2 claws of switch holder and remove the reset switch circuit board.
4. Unsolder the 2 switch terminals, then the reset switch can be removed.

Note: When replacing the reset switch, be sure to open the upper cabinet.

• How to remove the Hall element

1. Remove the turntable platter.
2. Remove the terminal solder by use of solder sucker.
3. Hold the Hall element with a tweezers and remove it while touching the soldering iron to the terminal. **(Fig. 11)**

• How to remove the dust cover

1. Pull out the 4 right and left rivets and 2 right and left rivet holders. **(Fig. 12)**
2. Lift the dust cover in the direction of the arrow. **(Fig. 12)** Then the dust cover can be removed.

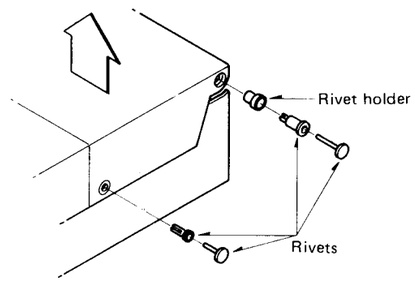


Fig. 12

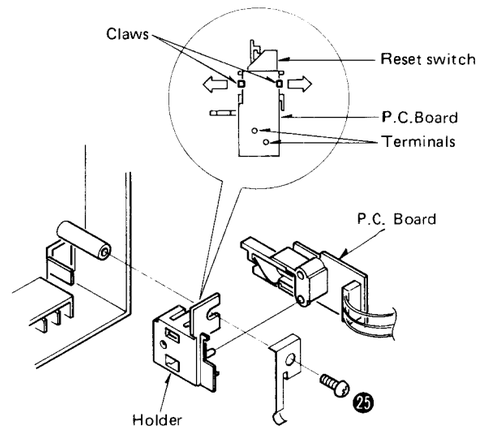


Fig. 10

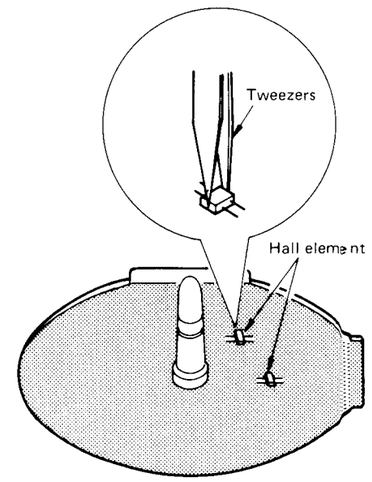


Fig. 11

• How to remove the tonearm

1. Remove the dust cover. **(Refer to "How to remove the dust cover.")**
2. Remove the shield cover setscrew **(Fig. 13 : ㉖)** and shield cover.
3. Unsolder the 5 lead wires from Tonearm.
4. Turn the worm gear by finger to move the tonearm center inward.
5. Remove the tonearm setscrew. **(Fig. 14 : ㉗)**
6. Remove the guide rail clamper, and pull out the guide rail, the remove the tonearm in the direction of the arrow Ⓐ.

• How to remove the offset angle detection circuit board

1. Remove the dust cover. (**Refer to "How to remove the dust cover.**")
2. Remove the indicator cover setscrew **(Fig. 14: ㉘)** and the indicator cover in the direction of the arrow Ⓑ . **(Fig. 14)**
3. Remove the offset angle detection circuit board adjustment screw **(Fig. 14: ㉙)**, then the offset angle detection circuit board can be removed.

Note: When replacing the offset angle detection circuit board, be sure to adjust the servo gain and offset voltage.

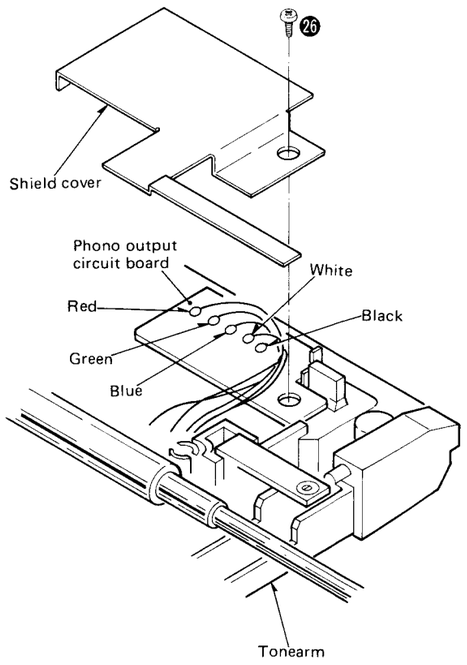


Fig. 13

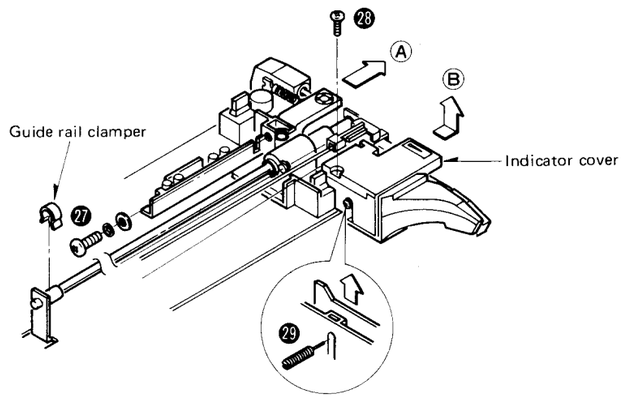


Fig. 14

■ MEASUREMENTS AND ADJUSTMENT

• Equipment used and condition of the set

1. Oscilloscope
2. DC voltmeter
3. Record (SFTR007) for adjustment
4. Set the optical sensor sensitivity selector to "M".

Step	Item	Preparations for adjustment	Adjusting portion	Adjusting method
1	**Start position**	1. Open the upper cabinet and put on the record. 2. Turn the power switch on. 3. Push the "start" switch.	Start position adjusting screw **(Fig. 15)**	1. Turn the start position adjusting screw. If it descends between turnes, turn the screw counter clockwise.
2	**Clock frequency**	1. Connect lead wire with clip to IC301 29-pin and 1-pin of operation circuit board. 2. Connect the oscilloscope to IC301 8-pin.	VR301 **(Fig. 16)**	1. Turn the power switch on. 2. Adjust VR301 so that the cycle of output waveform is 1.36msec. ± 0.07msec. **(Fig. 17)**
3	**Sensor gain**	1. Connect the DC voltmeter to IC401 12-pin (+) and 14-pin (–). 2. Put on the record for adjustment with side A up.	VR401 **(Fig. 16)**	1. Turn the power switch on. 2. Tonearm is on the rest position. (Blank area of the record.) 3. Adjust VR401 so that the output voltage is 8V ± 0.4V.
4	**Sensor resolution**	1. Connect the oscilloscope to IC401 9-pin (+) and 14-pin (–). 2. Put on the record for adjustment with side A up.	VR402 **(Fig. 16)**	1. Turn the power switch on. 2. Keep the F skip switch depressed to move the tonearm. (Output is delivered between the turnes.) 3. Adjust VR402 so that the peak output between tunes is 3V ± 0.3V. **(Fig. 18)**
5	**Stylus cue-down position**	1. Open the upper cabinet and hold the cabinet switch with tape. 2. Put on the record for adjustment with side B up. 3. Close the upper cabinet. 4. Connect the unit it the amplifier. (Connect the speakers to the speaker terminals.)	VR302 **(Fig. 16)**	1. Turn the power switch on. 2. Press the F skip switch twice and then press the start switch. 3. After completion of cueing, again press the B skip switch for the purpose of cueing down as previously mentioned. 4. Make sure that descending position is at count "18 ~ 19". 5. Adjust VR302 so that the decending position is at count "18 ~ 19".
6	**Tonearm offset angle**	1. Remove the dust cover. (Refer to "DISASSEMBLY INSTRUCTION") 2. Open the upper cabinet and hold the cabinet switch with tape. 3. Close the upper cabinet. 4. Put on the record.	Adjusting screw **(Fig. 19)**	1. Turn the power switch on. 2. Keep the F skip switch depressed to move the tonearm. 3. Turn the adjusting screw so that the arm center matches the V-groove of the of the lift bar.
7	**Servo gain and offset voltage**	1. Remove the dust cover. (Refer to "DISASSEMBLY INSTRUCTION") 2. Open the upper cabinet and hold the cabinet switch with tape. 3. Connect the DC voltmeter to CN301 5-pin (+) and 2-pin (–). 4. Remove the sensor cover.	VR501 (Servo gain) Screw (Offset voltage) **(Fig. 20)**	1. Turn the power switch on. 2. Keep the F skip switch depressed to move the tonearm. 3. Open the upper cabinet. 4. Completely shift the tonearm to the left. Then, adjust VR501 so that the voltage is 3.6V (Servo gain) 6. If the voltage is not 1.8V, adjust screw so that the output voltage is 1.8V. (Offset voltage)

- **Adjustment points**

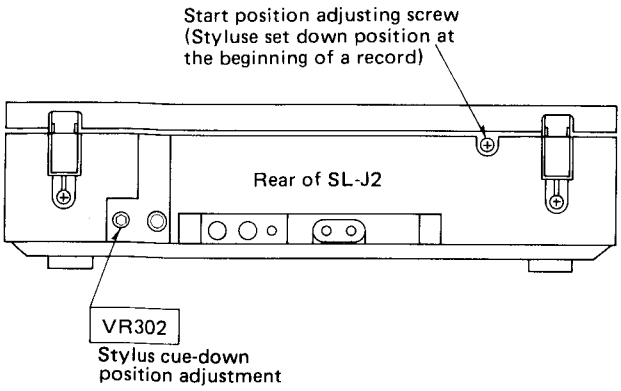


Fig. 15

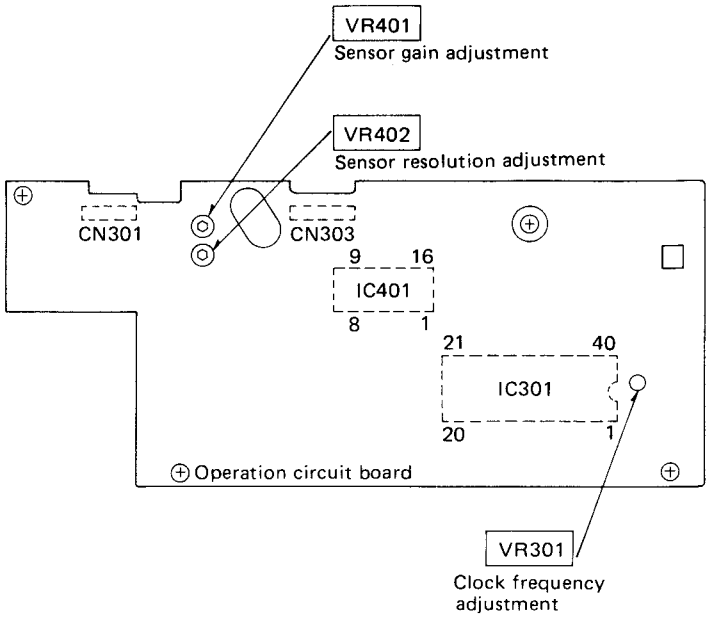


Fig. 16

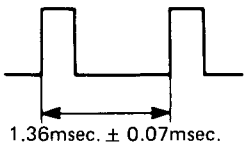


Fig. 17

Fig. 18

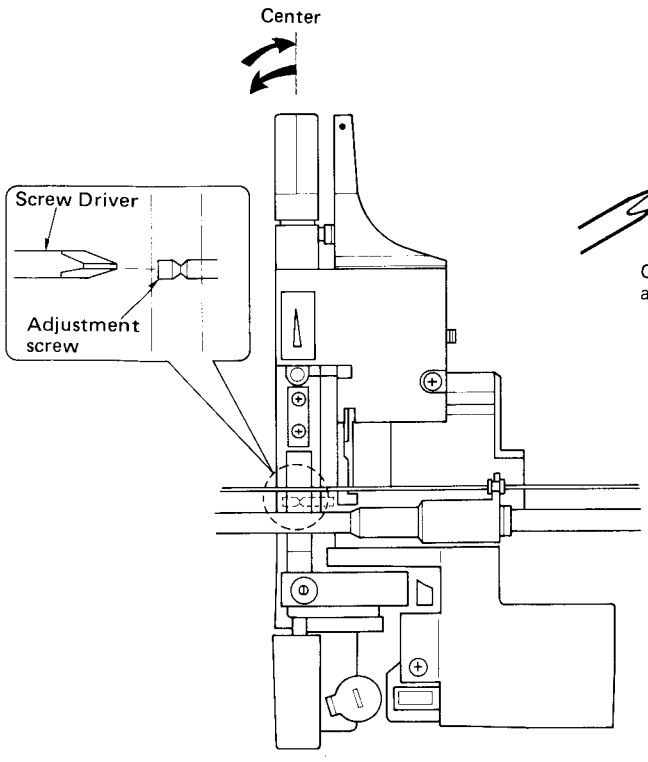


Fig. 19

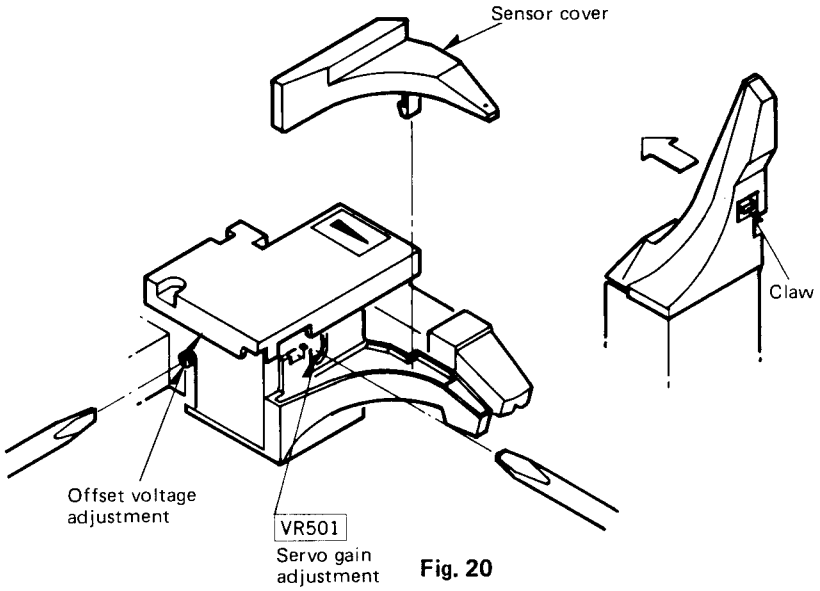


Fig. 20

■ TROUBLE SHOOTING

1. How to use the repair table (Fig. 21)

① Remove the bottom board.
② Remove the main circuit board and connect the P.C.B. ground terminal to the chassis (Stator frame).
③ Put the unit on the repair table.
④ Fit the turntable platter and put on the turntable mat.
⑤ Put on the record and check the circuits from under the unit.

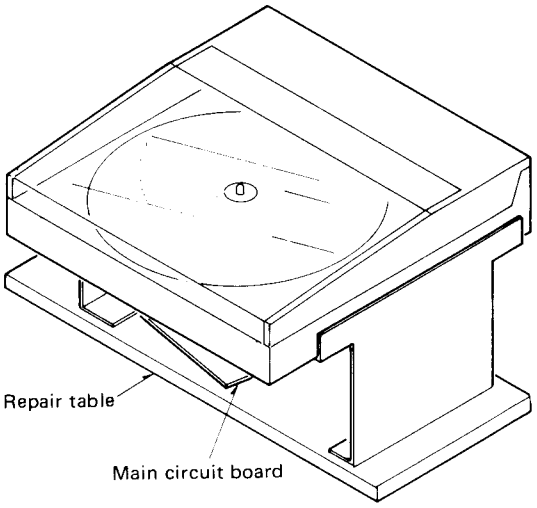


Fig. 21

2. How to raise the unit (Fig. 22)

Note: Turntable platter is not fixed on the center spindle. Take care so that the turntable platter will not come loose. Also, take care allow the set to fall down.

① Remove the bottom board.
② Completely open the upper cabinet.
③ Hold the cabinet (Reset) switch with tape.
④ Fit the turntable platter.
⑤ Raise the unit and check the circuits.

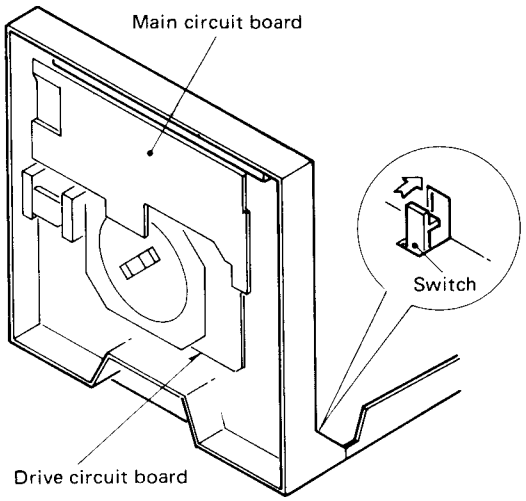


Fig. 22

3. How to turn over the unit (Fig. 23)

Note: This purpose is to check the voltage of each circuit during stop of the turntable.

① Remove the turntable platter and turn over the unit.
② Remove the bottom board.
③ Turn the power switch "on" and check the voltage.

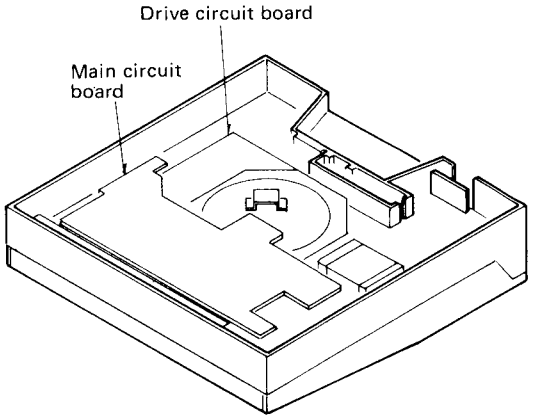


Fig. 23

Turntable does not rotate

Ⓒ, Ⓑ, Ⓔ of transistor are as follows:
Ⓒ : Collector
Ⓑ : Base
Ⓔ : Emitter

*1
Check points in [ ] are common to all symptoms.

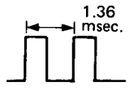
*1

Power source circuit
1. AC 18V between FC1 terminals ① and ②.
2. DC voltage of regulator IC (IC1)
   ① 19.8V, ② 0V, ③ 11.9V
3. DC voltage of regulator transistor (Q1)
   Ⓒ 9.5V Ⓑ 5.7V Ⓔ 5V

NO → AC cord, S1, T1, D1, IC1, Q1, C1 ~ C5, R1~R4, D5

YES

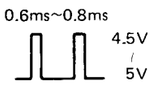
Clock frequency
1. Connect between terminals ㉙ and ① of IC301.
   Waveform of terminal Ⓑ of IC301.



NO → IC301, VR301, R301, C301

YES

Key scan signal
1. Waveform of terminals ⑤ ~ Ⓑ, ⑭ ~ ⑰ of IC301.



NO → IC301, D301 ~ 306, S301 ~ 306, S307, 701

YES

Power supply input terminal
1. DC voltage at terminal ① of IC101. (11.9V)
2. DC voltage at terminal ⑱ of IC201. (8.5V)

NO → IC101, IC201, R204, R208

YES

Push start switch (S302). →

Start/stop and brake circuit
1. DC voltage at terminal ㉛ of IC301. (0V), At stop 4.8V
2. DC voltage at terminal ⑩ of IC201. (0V), At stop 4.8V
3. DC voltage at terminal ⑫ of IC201. (0.6V), At stop 0V

NO → IC301, IC201, IC101, S302, C107

YES

Drive coil and Hall element
1. Conduction check of drive coils. (About 33Ω)
2. DC voltage of Hall elements.
   ① 3.8V, ② 7.6V, ③ 3.8V, ④ 0V

NO → Drive coil, H101, H102, IC101

YES

Drive circuit (Stop)
1. DC voltage at each terminal of IC101.

	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪
Voltage	0V	11.7V	0V	0V	0V	0V	0V	0V	0V	6V

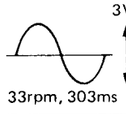
NO → IC101

YES

Drive circuit (Rotation)
1. DC voltage at each terminal of IC101.

	②	③	⑨	⑩	⑪
Voltage	0.6V	11.7V	4.9V	4.9V	4.7V

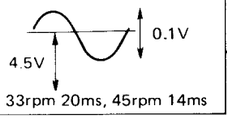
2. Waveform between terminal.
   ④ and ⑤ (⑥ and ⑦) of IC101.



NO → IC101

Unsatable rotation

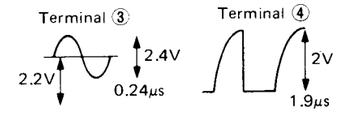
FG amplifier circuit
1. Conduction check of FG coil.
2. Waveform of terminal ⑮ of IC201.



NO → FG coil, IC201, R203, R205, C201~203

YES

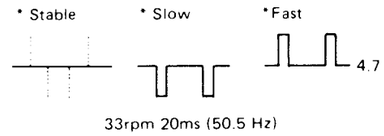
Quartz oscillator circuit
1. Waveforms of terminals ③ and ④ of IC201.



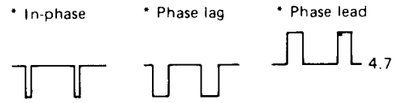
NO → X201, IC201, C204~206

YES

Speed and phase control circuit
1. Waveform of terminal ⑭ of IC201



2. Waveform of terminal ⑬ of IC201.



NO → IC201, IC101

Arm motor does not rotate

Motor control circuit
1. DC voltage at each terminal of IC301

	㉒	㉓	㉔
Stop	0.5V	1.0V	0V
Lead-in	0.5V	6.8V	4.8V
Return	6.8V	1.0V	4.8V

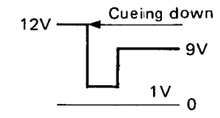
2. DC voltage at each terminal of IC401

	①	⑯	③
Stop	0V	0V	0V
Lead-in	0.2V	6.8V	7V
Return	6.8V	0.2V	7V

NO → IC301, 401, Motor

Cueing down/ up does not work

Cueing control circuit
1. DC voltage at terminal ② and ③ of IC301
   Terminal ②. . . .During cueing and down (0.8V)
   Terminal ③. . . .Only during cueing down (1.8V)
2. DC voltage of Q302 of collector



NO → IC301, S305, Q301, 302, Cueing plunger

■ HOW TO SET THE TONEARM DRIVE ROPE

When setting the rope, follow the procedure given below.

1. Remove the dust cover and tonearm cover. **(Refer to "How to remove the dust cover.")**
2. Remove the roller cover. **(Fig. 24)**
3. Set the rope in the order of 1 ~ 5 **(Fig. 24)**
4. Fit the rope connector to the tonearm.
5. Set the roller cover and turn the worm gear by hand to see that the tonearm moves.

Note: The arm drive wheel is not fixed. So, take care not to let is come loose during servicing. (Stop it with C-ring to prevent its removal.)

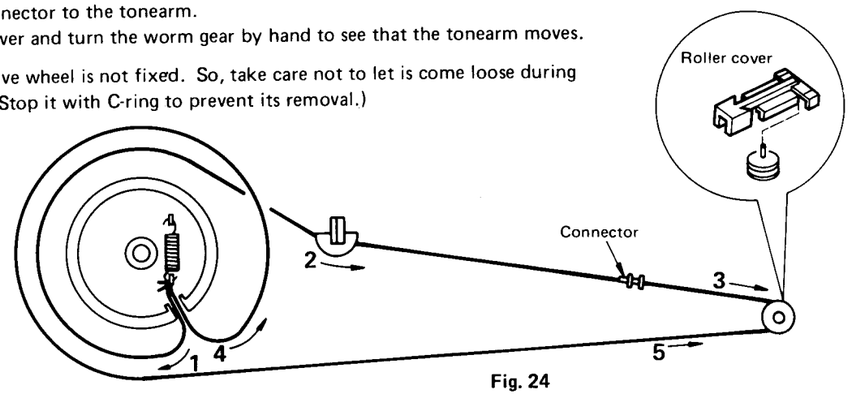


Fig. 24

■ RESISTORS AND CAPACITORS

Notes:
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
3. This "Ⓢ" mark is service standard parts and may differ from production parts.
4. Unless otherwise specified. All resistors are in OHMS (Ω) K = 1000Ω, M = 1000kΩ All capacitors are in MICROFARADS(μF), P = 10^{-6} μF.

Numbering System of Resistor

Example

ERD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value

ERG	1	AN	J	2R2
Type	Wattage	Shape	Tolerance	Value

Resistor Type	Wattage	Tolerance
ERD : Carbon	25 : 1/4W	F : ±1%
ERG : Metal Oxide	1 : 1W	J : ±5%
ERX : Metal Film	2 : 2W	G : ±2%

ERD2FCG□□□ ⟶ Fuse type carbon (1/4W)
ERD10TLJ□□□ ⟶ Chip type carbon (1/8W)
ERDS2TJ□□□ ⟶ Small type carbon (1/4W)
ECUV1H□□□ ⟶ Chip type ceramic capacitor

Numbering System of Capacitor

Example

ECKD	1H	102	Z	F
Type	Voltage	Value	Tolerance	Peculiarity

ECEA	50	M	R47	R
Type	Voltage	Peculiarity use	Value	Special use

Capacitor Type	Voltage		Tolerance
	ECEA Type	Others	
ECEA : Electrolytic	1A : 10V	1H : 50V DC	J : ±5%
ECKD : Ceramic	1C : 16V	2H : 500V DC	K : ±10%
ECQM : Polyester	1E : 25V	1 : 100V	Z : +80%, −20%
ECCD : Ceramic	1V : 35V		P : +100%, −0%
ECKF : Ceramic	1H : 50V		M: ±20%
ECEB : Electrolytic	1J : 63V		
	50 : 50V		

Ref. No.	Part No.	Value
RESISTORS		
R1	ERDS2TJ101	100
R2	ERDS2TJ221	220
R3	ERG2SJ330	33
R4	ERDS2TJ221	220
R103	ERD10TLJ104U	100K
R104	ERX1ANJ2R7	2.7
R105	ERD10TLJ270U	27
R201	ERD10TLJ273U	27K
R202	ERD10TLJ394U	390K
R203	ERD10TLJ680U	68
R204	ERD10TLJ151U	150
R205	ERD10TLJ223U	22K
R207	ERD10TLJ102U	1K
R208	ERD10TLJ680U	68
R301	ERDS2TJ562	5.6K
R302, 303	ERDS2TJ102	1K
R304, 305	ERDS2TJ331	330
R306	ERDS2TJ333	33K
R307	ERDS2TJ681	680
R309	ERDS2TJ152	1.5K
R310	ERDS2TJ272	2.7K
R311	ERDS2TJ562	5.6K
R312, 313	ERDS2TJ103	10K
R314	ERDS2TJ332	3.3K

Ref. No.	Part No.	Value
R315	ERDS2TJ101	100K
R316	ERDS2TJ394	390K
R317	ERDS2TJ333	33K
R318	ERDS2TJ103	10K
R319	ERDS2TJ223	22K
R320	ERDS2TJ392	3.9K
R321	ERDS2TJ272	2.7K
R322	ERDS2TJ332	3.3K
R323, 324	ERDS2TJ103	10K
R325, 326	ERDS2TJ332	3.3K
R327	ERDS2TJ472	4.7K
R328	ERDS2TJ471	470
R329, 330	ERDS2TJ103	10K
R331, 332	ERDS2TJ272	2.7K
R333	ERDS2TJ332	3.3K
R334	ERDS2TJ271	270
R335	ERDS2TJ821	820
R336	ERDS2TJ103	10K
R337	ERDS2TJ472	4.7K
R338	ERDS2TJ563	56K
R339	ERDS2TJ103	10K
R340	ERDS2TJ333	33K
R341	ERDS2TJ683	68K
R342	ERDS2TJ563	56K
R343, 344	ERDS2TJ681	680
R345, 346	ERDS2TJ681	680

Ref. No.	Part No.	Value
R347, 348	ERDS2TJ681	680
R349, 350	ERDS2TJ681	680
R351	ERDS2TJ103	10K
R353A	ERDS2TJ333	33K
R353B	ERDS2TJ331	330
R401	ERDS2TJ563	56K
R402, 403	ERDS2TJ123	12K
R404, 405	ERDS2TJ474	470K
R406	ERDS2TJ104	100K
R407	ERDS2TJ563	56K
R408	ERDS2TJ154	150K
R501 Ⓢ	ERD25FJ271	270
R502 Ⓢ	ERD25FJ391	390
R503 Ⓢ	ERD25FJ561	560
CAPACITORS		
C1, 2, 3 ⚠	ECQM1223KZ	0.022
C4	ECEB1EU222	2200
C5 Ⓢ	ECEA1CU330	33
C101 Ⓢ	ECEA1CU330	33
C102 Ⓢ	ECEA50ZR22	0.22
C103	ECQV05274JZ	0.27
C105, 106 ⚠ Ⓢ	ECEA1CN470S	47
C107 Ⓢ	ECEA50Z1	1
C201	ECEA1AU470	47
C202	ECEA50ZR22	0.22

Ref. No.	Part No.	Value
C203 Ⓢ	ECQM1H683JZ	0.0068
C204	ECUV1H121JCM	120P
C205	ECUV1H330JCM	33P
C206	ECUV1H121JCM	120P
C207 Ⓢ	ECEA1AU470	47
C208 Ⓢ	ECEA1AU470	47
C301 Ⓢ	ECCD1H101K	100P
C302	ECFR1H104ZF	0.1
C303 Ⓢ	ECEA1CU330	33
C304	ECFR1H104ZF	0.1
C305 Ⓢ	ECEA50M1R	1
C306	ECQM1H104JZ	0.1
C307 Ⓢ	ECEA1HU4R7	4.7
C308	ECFR1H104ZF	0.1
C309, 310 Ⓢ	ECKD1H681KB	680P
C311 Ⓢ	ECCD1H101J	100P
C312, 313	ECFR1H10ZF	0.1
C401 Ⓢ	ECEA1HUR47	0.47
C402 ⚠	ECEA1CN100S	10
C403, 404	ECQM1H473JZ	0.047
C405 Ⓢ	ECEA1HU2R2	2.2
C601	ECFB1B104ZM	0.1
C701	ECEA1CU101	100

■ REPLACEMENT PARTS LIST

Notes:
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
3. Bracketed indications is Ref. No. columns specify the area. Parts without these indications can be used for all areas.
4. The "Ⓢ" mark is service standard parts and may differ from production parts.
5. The parenthesized numbers in the colums of description stand for the quantity perset.

Areas

* [M] is available in U.S.A.
* [MC] is available Canada.

Ref. No.	Part No.	Description
INTEGRATED CIRCUITS		
IC1	AN7812	Regulator,12V
IC101	AN6638	Turntable Drive
IC201	AN6683	Turntable Control
IC301	MN1420FPL	Micro Computor
IC302	AN6914	Computor
IC401	AN6690	Arm Motor Drive & Blank Groove Detection
TRANSISTORS		
Q1	2SC1383	Regulator,5V
Q301	2SD636	LED Drive
Q302	2SD892	Cueing Control
Q303,304	2SD636	Speed Selector & Synchro Rec Drive
Q305~307	2SB641	Switching
Q308	2SD636	Relay Drive
Q309,310	2SB641	Shaping
Q311	2SD636	LED Drive
Q312	2SB641	Switching
DIODES		
D1 ⚠	SVDS1RBA20F	Rectifier
D5	MA4056	Zener,5.6V
D301~306	MA165	Switching
D307	SVDZJ02N02	Repeat Indicator
D308	MA4075	Zener,7.5V
D309	SVDZJ02N03	Cue-down Indicator
D310	SVDZJ02N02	Cue-Up Indicator
D311~317	MA165	Switching
D311B	LN513RA	Music Select Indicator
D401	MA4068	Zener,6.8V
D501 Ⓢ	MA162A	Switching
D502	SVDEBR3432S	Tonearm Position Indicator
D701 Ⓢ	MA162A	Switching

Ref. No.	Part No.	Description
SWITCHIES		
S1 ⚠	SFDSC02N02	Power
S301~306	EVQQS405K	Stop,Start,Skip-Search, Cueing &Repeat
S307	SFDSC05N01	Reset
S308,309	SFDSHSW0699	Size Selector & Speed Selector
S401	SFDSHSW0699	Sensor Gain Selector
S601	SFDSC02N03	Reset
VARIABLE RESISTORS		
VR301	EVN61AA00B54	Clock Frequency Adj,50KΩ(B)
VR302	EVJE1AF20B54	Stylus Cue-down Position Adj. 50KΩ(B)
VR401	EVN61AA00B55	Sensor Gain Adj,500KΩ(B)
VR402	EVN61AA00B25	Sensor Resolution Adj.,200KΩ(B)
VR501	EVNM0AA00B14	Servo Gain Adj.,10KΩ(B)
RELAY		
RL701	SFDYQ11N02	Muting Relay
RL701	SFDYG5A237P	Muting Relay
CRYSTAL		
X201	SVQSH41TR	4.193MHz
HALL ELEMENTS		
H101,102	OH-002	Turntable Position Det.

Ref. No.	Part No.	Description
PHOTO INTERRUPTERS		
PC501	ON1186	Offset Angle Sensor
PC502	SFPABJ0204A	Blank Groove Sensor
PC601	ON1161	Tonearm Position Sensor
POWER TRANSFORMER		
T1(M) ⚠	SLT48DTL3A	Power Source
T1(MC) ⚠	SLT48DT11C	Power Source
FUSE		
F1(MC) only ⚠	XBA2F08NU100	250V,800mA
COMPONENT COMBINATION		
RX301	EXBP87681J	680Ω×7

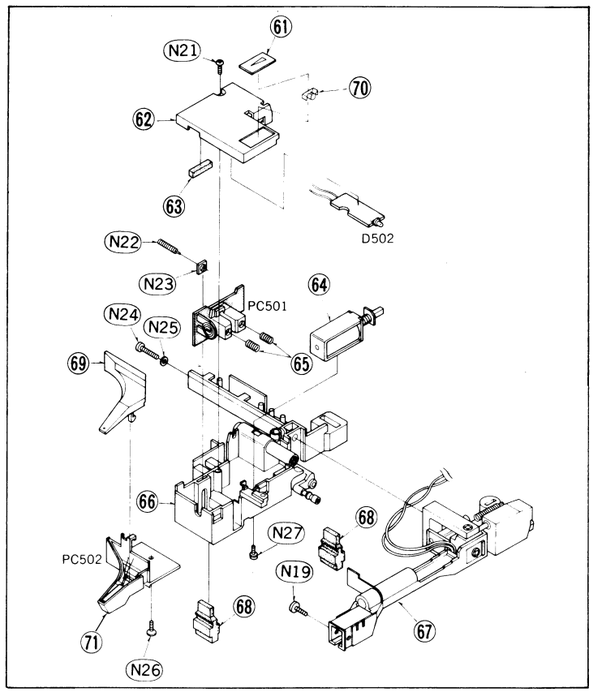
Caution:
Two types of muting relay (RL701) are used. When placing an order, confirm the caution mentioned in the explosion view on page 17.

Ref. No.	Part No.	Description	
CABINET AND CHASSIS PARTS			
1	SFADJ02M01E	Dust Cover Ass'y	(1)
1—1	SFKBJ02M01	Badge,Dust Cover	(1)
1—2	SFGZJ02N01	Cushion Rubber Dust Cover	(2)
2	SFUMQ06N08	Lutch,Dust Cover	(2)
3	SFUMD04N07	Lutch,Dust Cover	(2)
4	SFGZQ06N01	Rubber,Lutch	(2)
5	SFTGQ06N01	Turntable Mat	(1)
6	SFWEC06N01	Adaptor,45r.p.m	(1)
7	SFQAC06N01	Spring,45r.p.m Adaptor	(1)
8	SFTEQ05N01	Turntable Platter	(1)
9	SFTMC07-01E	Rotate Magnet	(1)
10	SFAUJ02N01	Bottom Board	(1)
11	SFQCC05N01	Spring,Insulator	(4)
12	SFGAC05N02	Insulator	(4)
13	SFUMJ02N02	Rod,Power Switch	(1)
14	SFUMJ02N03	Filter,Front Panel	(1)
15	SFKKJ02N01	Ornament Plate	(1)
16	SFUMJ02N01	Front Panel	(1)
17	SFKTC06N04	Button,Power Switch	(1)
18	SFACJ02N01	Cabinet	(1)
19	SFKTJ02N01	Button,Operation	(1)
20	SFKTJ02N02	Knob,Selectors	(3)
21	SFDJC01N01	Jack,Synchro Rec	(1)
22	SFGCQ06N02	Cushion Rubber, Power Transformer	(2)
23 ⚠	SFDJHSC0491	AC Socket	(1)
24	SFATQ06N01E	Hinge	(2)
25[M]	SFNNJ02M01	Name Plate	(1)
25[MC]	SFNNJ02C01	Name Plate	(1)
26	SFGKQ06N01	Rubber Cap	(1)
27	SFUML11R03	Wheel,Tonearm Drive	(1)
28	SFUZC05N02E	Rope Ass'y, Tonearm Drive	(1)
29	SFUMV05N23	Cap,Pulley	(1)
30	SFUMC05N22	Pulley	(1)
31	SFGBC10-01	Belt,Tonearm Drive Motor	(1)
32	SFMHJ02N01E	Motor Ass'y, Tonearm Drive	(1)
33	SFUMQ06N06A	Worm Grear Ass'y	(1)
34	SFUZC02N01	Rod,Rest Switch	(1)
35	SFUMC02N05	Lever,Rest Switch	(1)
36	SFQHQ34N22	Spring,Rest Switch Lever	(1)
37	SFUMC02N06	Base,Rest Switch	(1)
38	SFUMQ06N09	Holder,Rest Switch	(1)
39	SFUPBL3N11E	Base,Tonearm Drive Motor	(1)
40	SFUMC02N10	Rope Guide	(1)
41	SFQA913-01	Spring,Adjustment Screw	(1)
42	SFUMQ06N07	Clamper,Guide Rail	(1)
43	SFGCQ06N01	Cushion Rubber, Guide Rail	(1)
44	SFXJQ06N01	Guide Rail,Tonearm	(1)
45	SFGCC05N05	Cushion Rubber, Guide Rail	(1)
46	SFUMC02N12	Clamper,Lead Wires	(1)
47	SFGCQ06N04	Cushion Rubber, Dust Cover	(2)
48	SFGZBL3N02	Spacer	(1)
49	SFUMC05N15	Holder,Reset Switch	(1)
50	SFQPC05N01	Spring,Reset Switch	(1)
51	SFACJ02N013	Cover,Lead Wires	(1)
52	SFKTQ06N02	Knob,Cueing Down Position Control	(1)
53	SFDJJ02N04E	Jack,Phono Output	(1)
54	SFUKQ06N02E	Base Ass'y,Tonearm	(1)
55	SFMGQ34N01	Cover, Stator Coil	(1)
56	SFMZC06N01R	Stator Frame Ass'y	(1)
57	SFACJ02N012	Cover, Cabinet	(1)

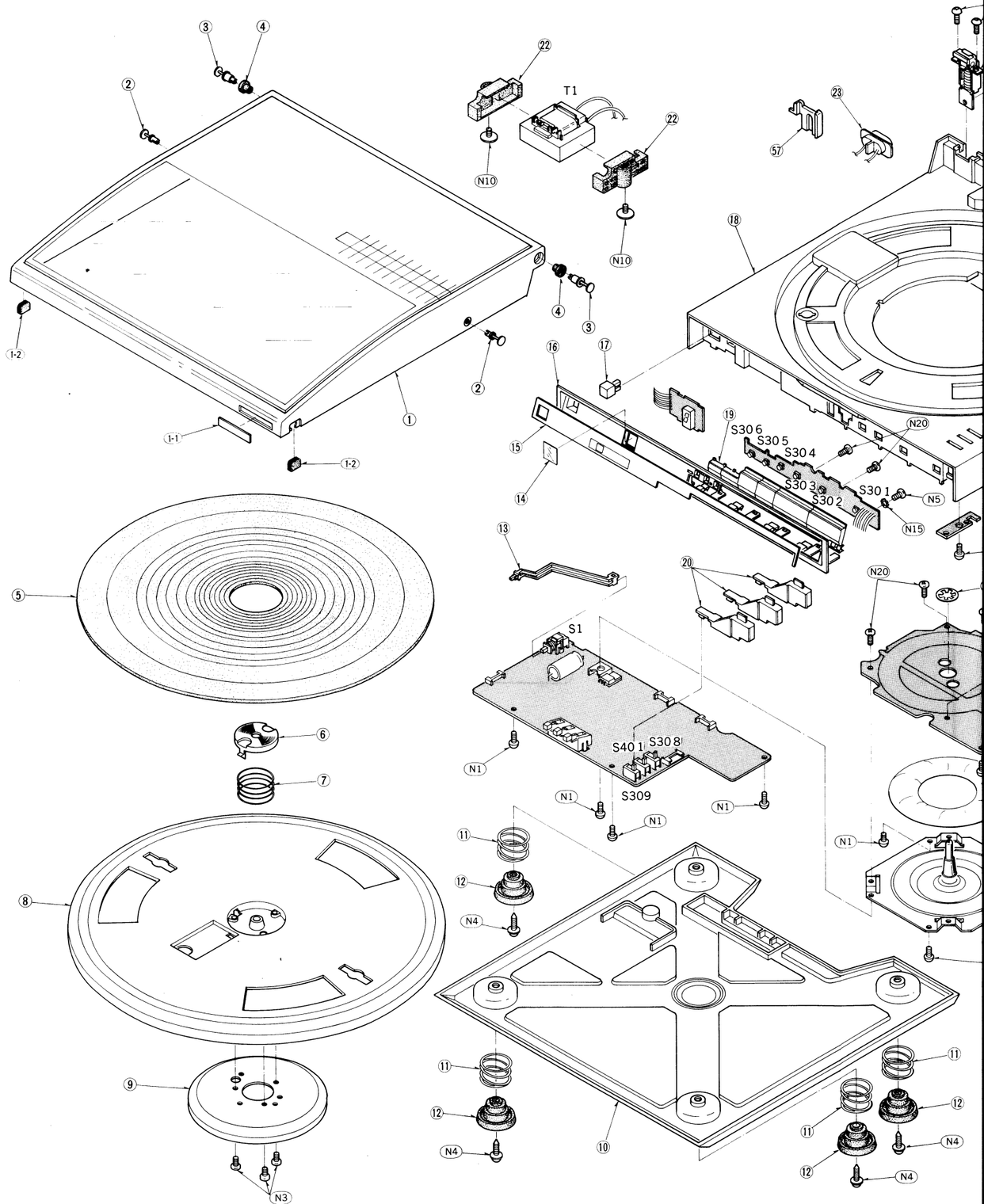
Ref. No.	Part No.	Description	
TONEARM PARTS			
61	SFPAK0Q601	Indicator Plate	(1)
62	SFPCS0Q601	Indicator Cover	(1)
63	SFPGM0Q601	Rubber	(1)
64	SFDZC05N01E	Solenoid Ass'y	(1)
65	SFPSP00302	Spring,Adjustment	(1)
66	SFPKD0J301R	Base,Tonearm	(1)
67	SFPAMJ0201A	Tonearm Ass'y	(1)
68	SFPGML1101	Cushion Rubber	(2)
69	SFPABJ0205R	Cover,Sesor Case	(1)
70	SFPCS00502	Light Concentrator	(1)
71	SFPABJ0204A	Blank Groove Sensor A'ssy (PC502)	(1)
SCREWS,WASHERS AND NUT			
N1 Ⓢ	XTV3+8BFN	Screw,+3×8	(12)
N2 Ⓢ	XTV3+6BFZ	Screw,+3×6	(6)
N3 Ⓢ	XSN3+5S	Screw,+3×5	(3)
N4	XTWS3+14QFYR	Screw,+3×14	(4)
N5 Ⓢ	XTN3+6B	Screw,+3×6	(2)
N6	XTWS3+14TFZ	Screw,+3×14	(2)
N7	XTN16+10G	Screw,+1.6×10	(1)
N9	XTV3+20J	Screw,+3×20	(1)
N10	SFXGQ06N01	Screw	(1)
N11	XSN3+30S	Screw,+3×30	(1)
N12 Ⓢ	XWE3D10	Washer,φ3	(1)
N13 Ⓢ	XWE3A8BW	Washer,φ3	(2)
N14	CSTW3	Washer	(2)
N15 Ⓢ	XWC3B	Washer,φ3	(2)
N17	XNC3HS	Nut,φ3	(1)
N18	SFXWC06N02	Washer	(1)
N19	SFPEV0Q601	Screw,Cartridge	(1)
N20 Ⓢ	XTV3+6BFN	Screw,+3×6	6
N21	XTN23+6JFZ	Screw,+2.3×6	(1)
N22	SFPTN00301	Screw,Offset Adj.	(1)
N23	SFXN623—1	Nut	(1)
N24 Ⓢ	XSN3+12S	Screw,+3×12	(1)
N25 Ⓢ	XWA3B	Washer,φ3	(1)
N26	XTS26+6JFZ	Screw,+2.6×6	(1)
N27	XYN2+C4FZ	Screw,+2×4	(1)
N28	XTN2+8B	Screw,+2×8	(1)

Ref. No.	Part No.	Description	
ACCESSORIES			
A1[M]	SFNUJ02M01	Instruction Book	(1)
A1[MC]	SFNUJ02C01E	Instruction Book	(1)
A2	SFDHC05N01	Phono Output Cord	(1)
A3	SFDLJ02N01	Ground Wire	(1)
A4 ⚠	SFDAC05M01	AC Cord	(1)
PACKING PARTS			
P1[M]	SFHPJ02M01	Carton Box	(1)
P1[MC]	SFHPJ02C01	Carton Box	(1)
P2	SFHHJ02N01	Pad,Front	(1)
P3	SFHHJ02N02	Pad,Rear	(1)
P4	SFHKC05N01	Clamper,Turntable Platter	(2)
P5	SFHKQ06N01	Spacer,Tonearm	(1)
P6	SFHSC06N01	Spacer,Dust Cover	(1)
P7	SFYH45×60	Polyethylene Bag,Unit	(1)
P8	SFHDN05M01	Sheet	(1)
P9	SFYF33B35	Polyethylene Bag, Turntable Mat	(1)
P10	SFHDD04N01	Pad,Turntable Mat	(1)
P11	SFYH17×16	Polyethylene Bag, Accessories	(1)

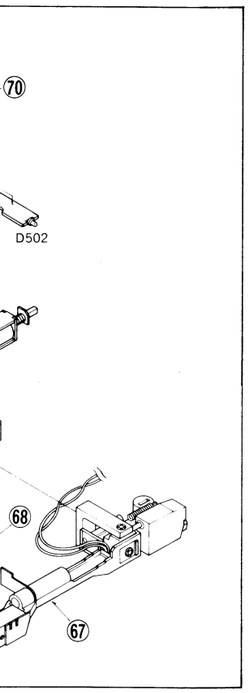
- **Tonearm Part**



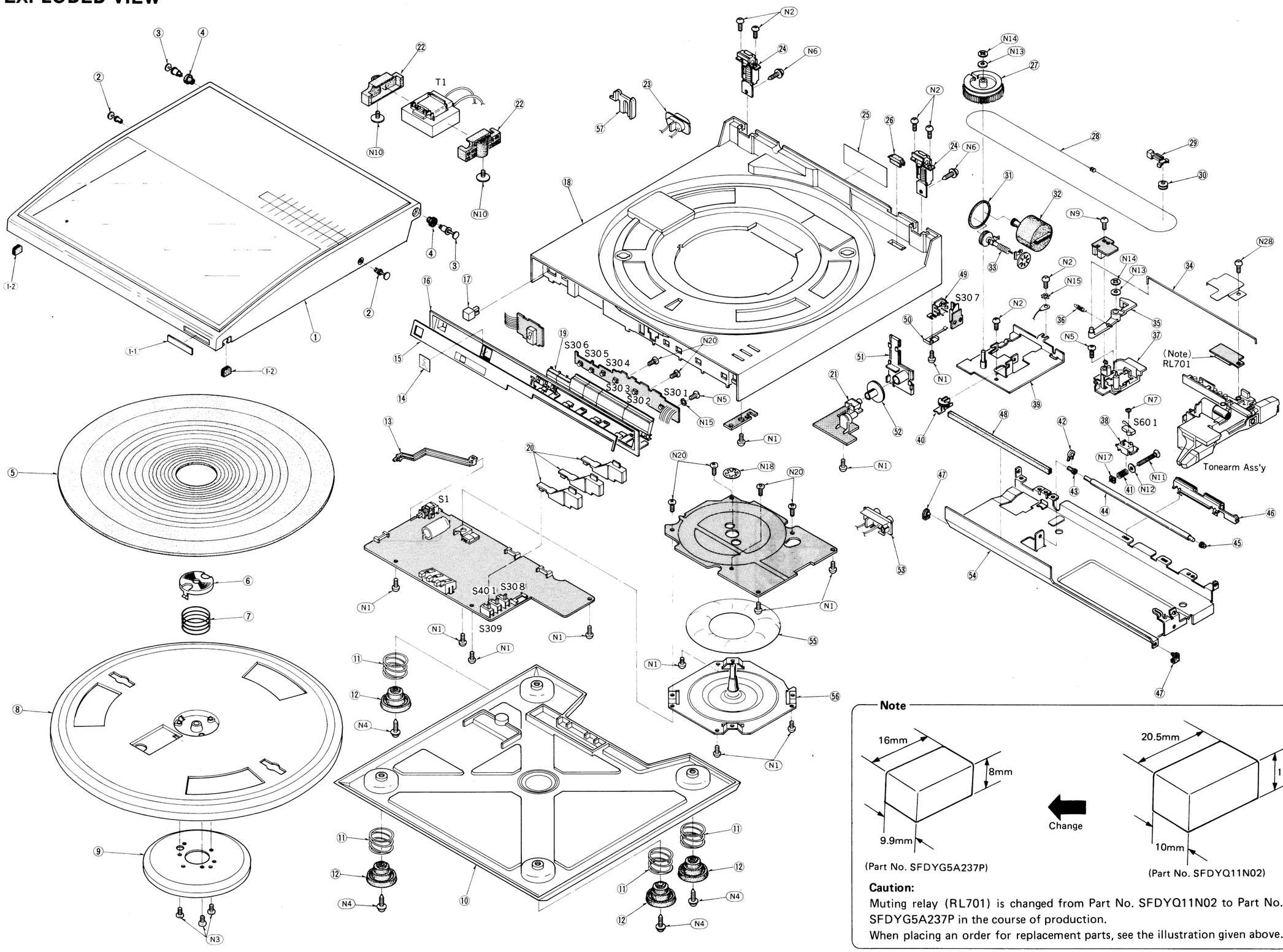
■ EXPLODED VIEW



	Description	
01	Instruction Book	(1)
01E	Instruction Book	(1)
01	Phono Output Cord	(1)
01	Ground Wire	(1)
01	AC Cord	(1)
01	Carton Box	(1)
01	Carton Box	(1)
01	Pad,Front	(1)
02	Pad,Rear	(1)
01	Clamper,Turntable Platter	(2)
01	Spacer,Tonearm	(1)
01	Spacer,Dust Cover	(1)
0	Polyethylene Bag,Unit	(1)
01	Sheet	(1)
	Polyethylene Bag, Turntable Mat	(1)
01	Pad,Turntable Mat	(1)
	Polyethylene Bag, Accessories	(1)



■ EXPLODED VIEW



Note

(Part No. SFDYG5A237P)

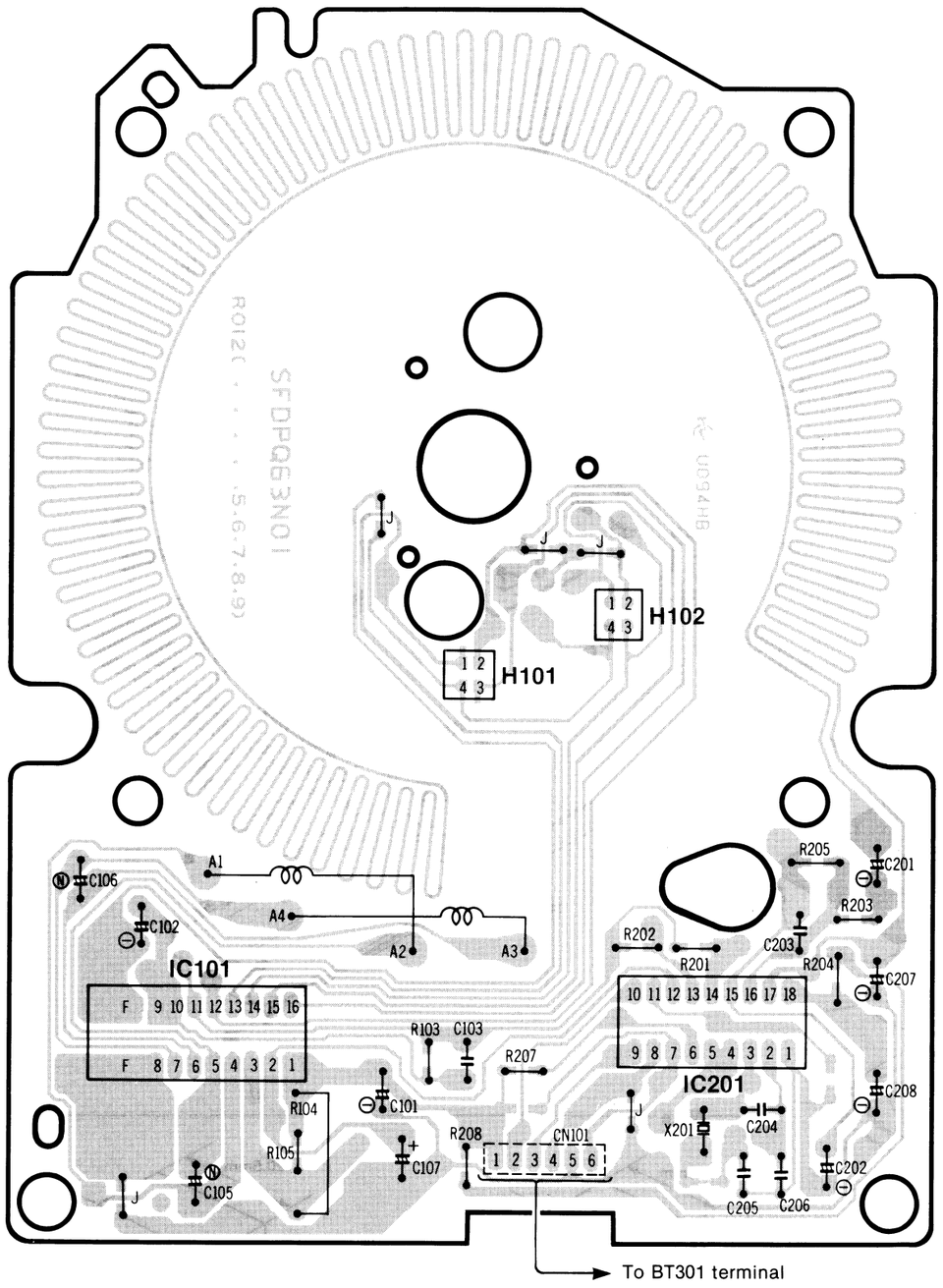
(Part No. SFDYQ11N02)

Caution:

Muting relay (RL701) is changed from Part No. SFDYQ11N02 to Part No. SFDYG5A237P in the course of production.

When placing an order for replacement parts, see the illustration given above.

■ CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM



- **Terminal guide of transistors, and IC's**

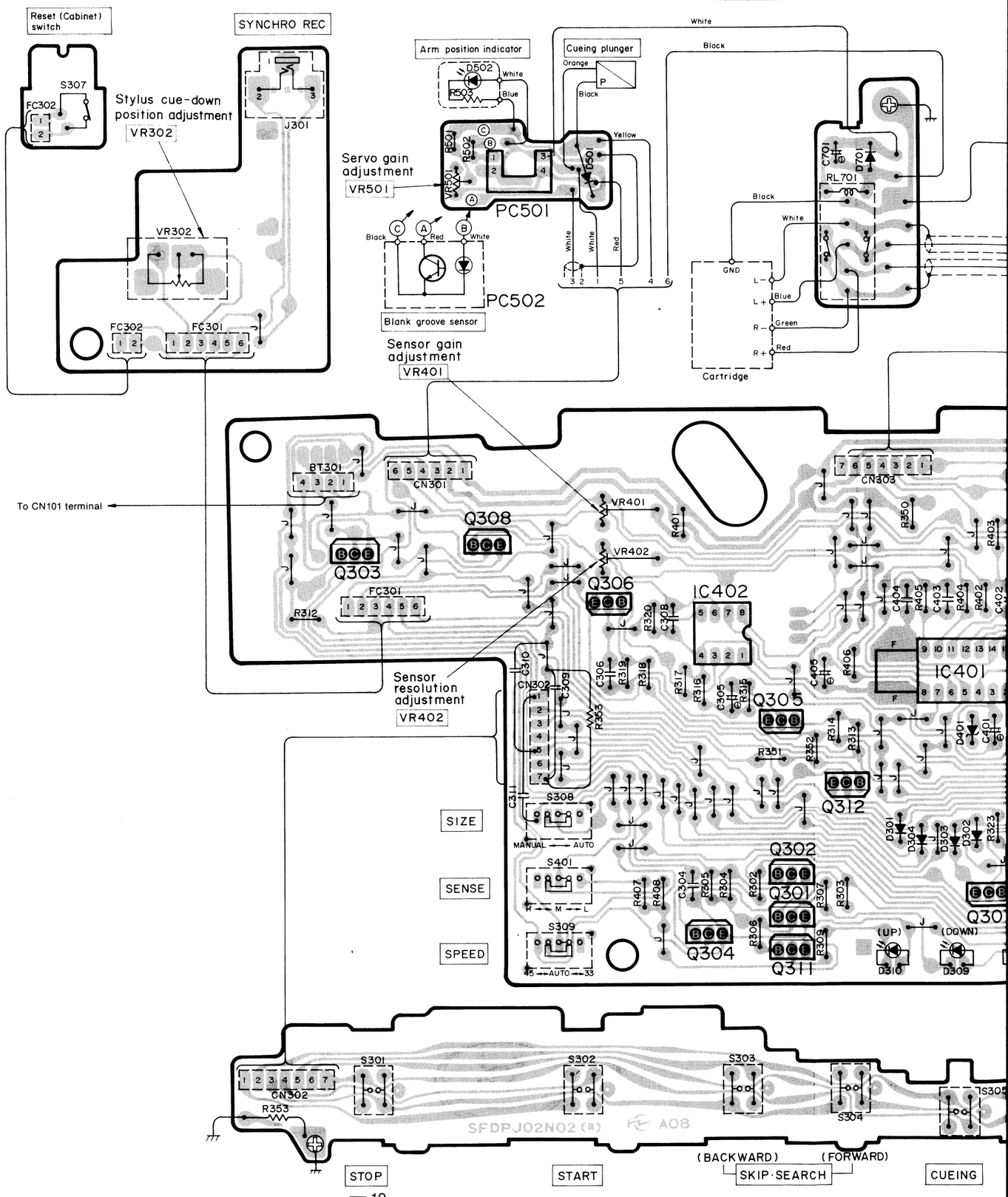
AN6914	8 pin
MN1420	40 pin
AN6683	18 pin

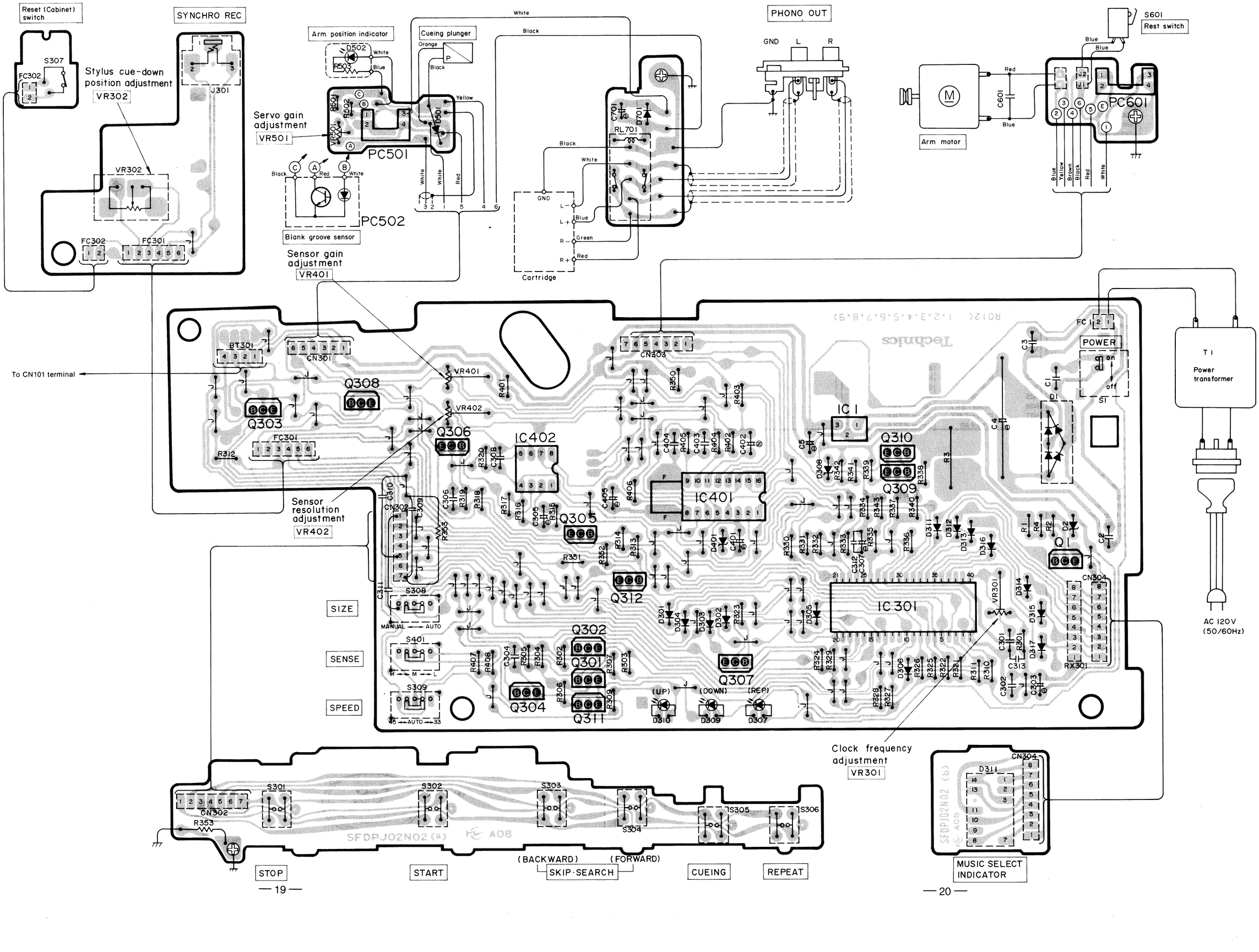
AN6638, AN6690

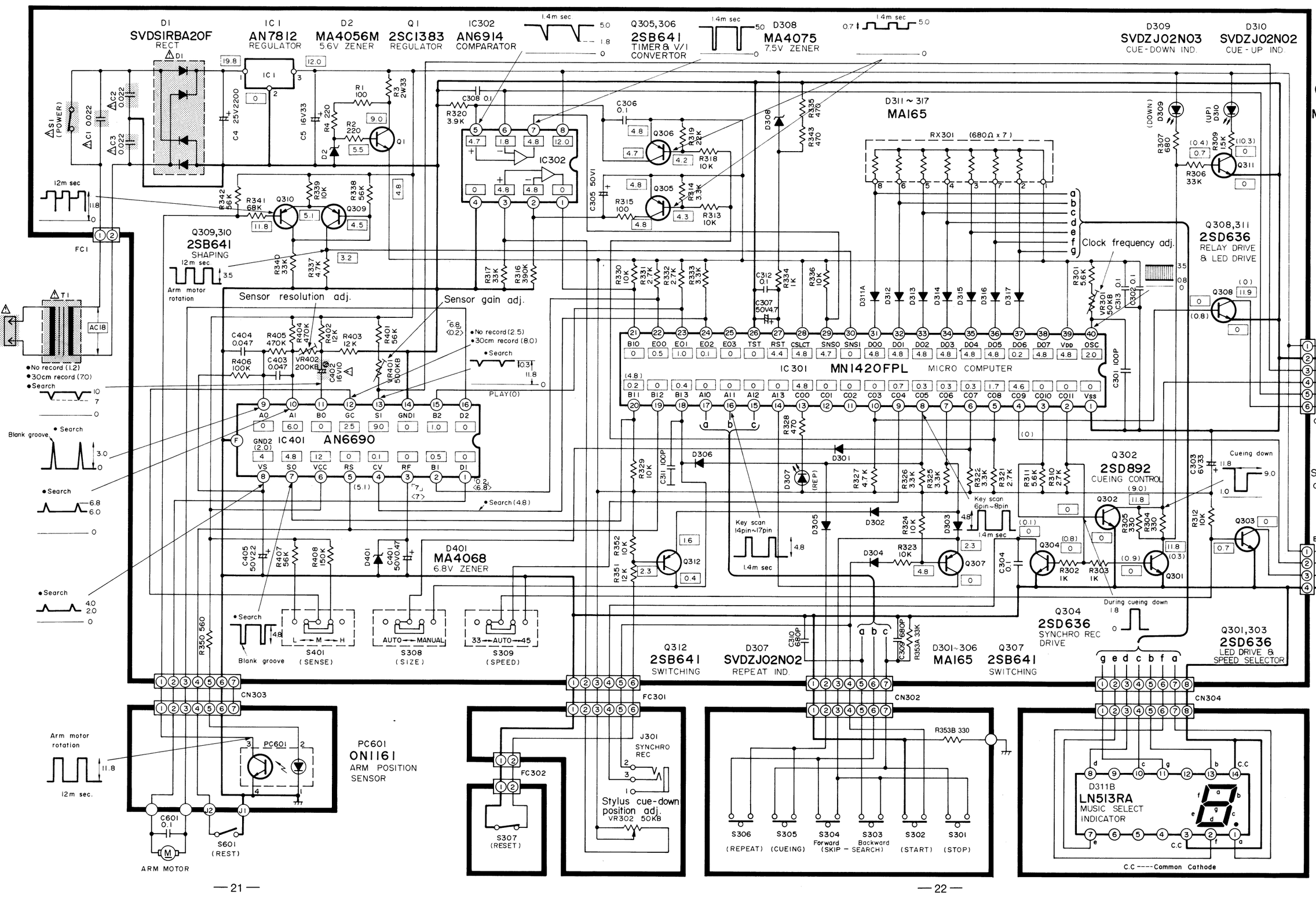
2SB641, 2SD636

2SD8921, 2SC1383

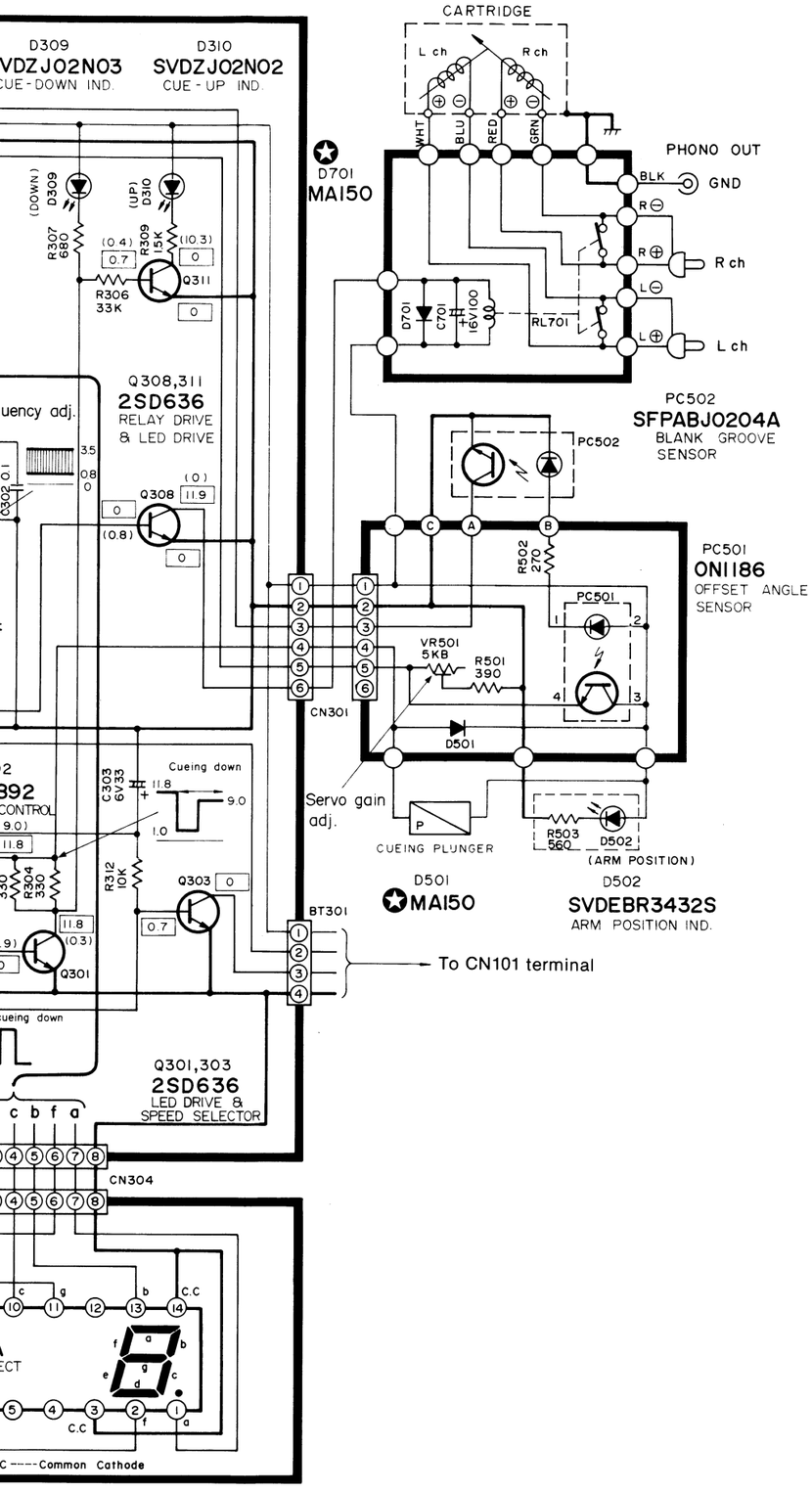
AN7812




Reset (Cabinet) switch
S307
FC302
SYNCHRO REC
J301
Stylus cue-down position adjustment
VR302
VR302
FC302
FC301
Arm position indicator
D502
R503
White
Blue
Cueing plunger
Orange
P
Black
White
Black
Yellow
Servo gain adjustment
VR501
R501
R502
VR501
D501
PC501
Black
Red
White
PC502
Blank groove sensor
White
White
Red
3 2 1 5 4 6
Sensor gain adjustment
VR401
PHONO OUT
GND L R
C701
D701
RL701
Black
White
GND
L−
L+
Blue
R−
Green
R+
Red
Cartridge
S601
Rest switch
Blue
Blue
Red
Blue
J2
PC601
Arm motor
Blue
Yellow
Brown
Black
Red
White
To CN101 terminal
BT301
CN301
VR401
R401
Q308
Q303
VR402
Q306
FC301
R312
IC402
R320
C308
Sensor resolution adjustment
VR402
CN302
C310
C309
R309
C306
R319
R318
R317
R316
C305
R315
Q305
R353
C311
S308
MANUAL AUTO
SIZE
S401
H M L
SENSE
S309
45 AUTO 33
SPEED
Q302
Q301
Q304
Q311
R314
R313
R352
R351
Q312
CN303
R350
R403
C404
R405
C403
R404
R402
C402
IC401
C405
R406
C401
D401
R330
R331
R332
R333
R335
R336
D311
D312
D313
D316
C312
C307
IC301
D301
D304
D308
D302
R323
D305
Q307
R324
R329
R328
R327
D306
R326
R325
R322
R321
R311
R310
C302
C303
C301
R301
D314
D315
D317
VR301
RX301
CN304
IC1
Q5
D306
R342
R341
R339
Q310
Q309
R338
R3
R334
R343
R337
R340
C4
C3
C1
D1
FC1
POWER
on
off
S1
T1
Power transformer
AC 120V (50/60Hz)
R1
R4
R2
D2
Q
C8
CN304
D311
MUSIC SELECT INDICATOR
Clock frequency adjustment
VR301
S301
S302
S303
S304
S305
S306
CN302
R353
SFDPJ02N02 (a)
(BACKWARD)
(FORWARD)
SKIP·SEARCH
CUEING
REPEAT
STOP
START
(UP)
(DOWN)
(REP)
D310
D309
D307
AN7812


D1 SVDSIRBA20F RECT
IC1 AN7812 REGULATOR
D2 MA4056M 5.6V ZENER
Q1 2SC1383 REGULATOR
IC302 AN6914 COMPARATOR
Q305,306 2SB641 TIMER & V/I CONVERTOR
D308 MA4075 7.5V ZENER
D309 SVDZJ02N03 CUE-DOWN IND.
D310 SVDZJ02N02 CUE-UP IND.
D311 ~ 317 MA165
D701 MA150
IC 301 MN1420FPL MICRO COMPUTER
IC401 AN6690
Q309,310 2SB641 SHAPING
Q308,311 2SD636 RELAY DRIVE & LED DRIVE
Q302 2SD892 CUEING CONTROL
Q304 2SD636 SYNCHRO REC DRIVE
Q312 2SB641 SWITCHING
D307 SVDZJ02N02 REPEAT IND.
D301~306 MA165
Q307 2SB641 SWITCHING
Q301,303 2SD636 LED DRIVE & SPEED SELECTOR
D401 MA4068 6.8V ZENER
PC601 ON1161 ARM POSITION SENSOR
D311B LN513RA MUSIC SELECT INDICATOR
Sensor resolution adj.
Sensor gain adj.
Clock frequency adj.
Cueing down
Servo gain adj.
Stylus cue-down position adj. VR302 50KB
Key scan 6pin~8pin
Key scan 14pin~17pin
During cueing down
AC 120V (50/60Hz)
Arm motor rotation
ARM MOTOR
S401 (SENSE)
S308 (SIZE)
S309 (SPEED)
S307 (RESET)
S306 (REPEAT)
S305 (CUEING)
S304 Forward (SKIP – SEARCH)
S303 Backward
S302 (START)
S301 (STOP)
S601 (REST)
C.C ----Common Cathode
CN303
CN302
CN304
CN301
FC301
FC302
FC1
BT301

9 10 11 12 13 14 15 16 17 18 19



■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with development of new technology.)

IMPORTANT SAFETY NOTICE

The shaded area on this schematic diagram incorporates special features important for protection from fire and electrical shock hazards.
When servicing it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.

• Product for MC only

FUSE REPLACEMENT

Symbol located near the fuse indicates fast operating type. For continued protection against fire hazard, replace with same type fuse. Refer to the symbol for fuse rating.

FUSIBLE REMPLACEMENT

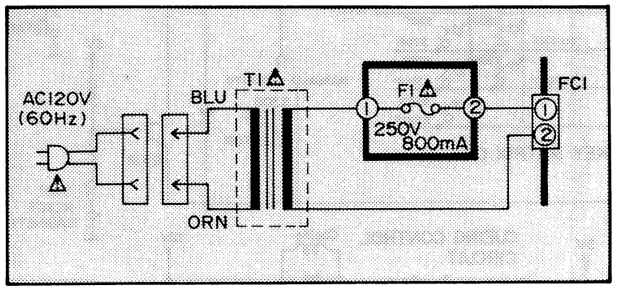
Le symbole qui se trouve près du fusible singifie un fusible à action rapide. Pour une protection contiue contre les risques d'incendie, n'utiliser que des fusibles du même type. Se rapporter au symbole pour la valeur des fusibles.

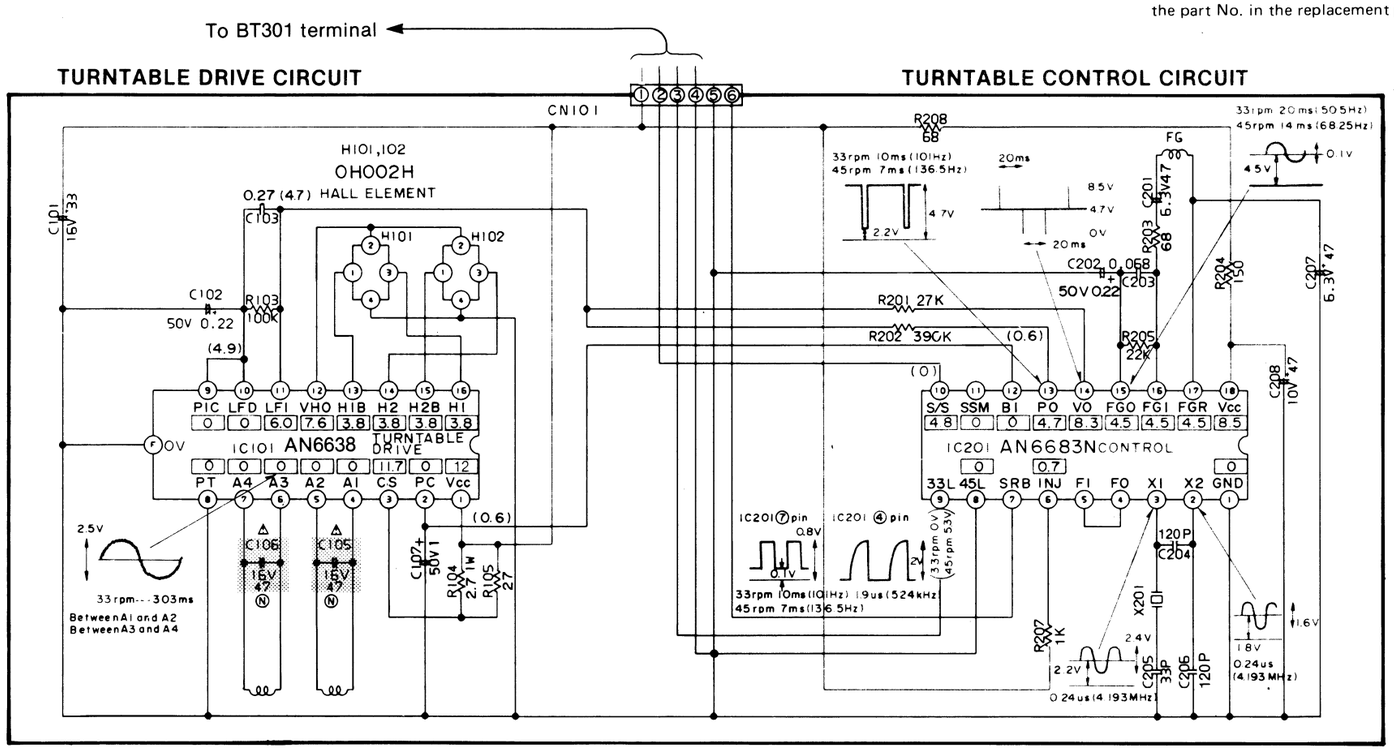
Notes:

1. **S1** : Power switch in "**on**" position.
2. **S301** : Stop switch.
3. **S302** : Start switch.
4. **S303** : Backward skip/search switch.
5. **S304** : Forward skip/search switch.
6. **S305** : Cueing control switch.
7. **S306** : Repeat switch.
8. **S307** : Cabinet (Reset) switch in "**on**" position. (Upper cabinet is closed)
9. **S308** : Record size selector switch in "**auto**" position.
10. **S309** : Speed selector switch in "**auto**" position.
11. **S401** : Sensitivity selector switch in "**M**" position.
12. **S601** : Rest switch in "**off**" position. (Presently tonearm is on rest.)
13. The voltage value and waveform are the standard values of this measured by DC electronic voltmeter (high impedance) and oscilloscope on the bais of chassis. Therefore, the voltage value and waveform may include some error due to the internal impedance of the tester or the measuring unit.
    * ▭ is the voltage when turntable is stop.
    * ( ) is the voltage when turntable is in rotation.
    * ⌐ ⌙ is the voltage when tonearm is in lead-in mode.
    * < > is the voltage when tonearm is in return mode.
    * (( )) is the voltage at 45 rpm.
14. —— Positive voltage lines.
15. Important safety notice: Components identified by ⚠ mark have special characteristcs important for safety. When replacing any of these components, use only manufacurer's specified parts.

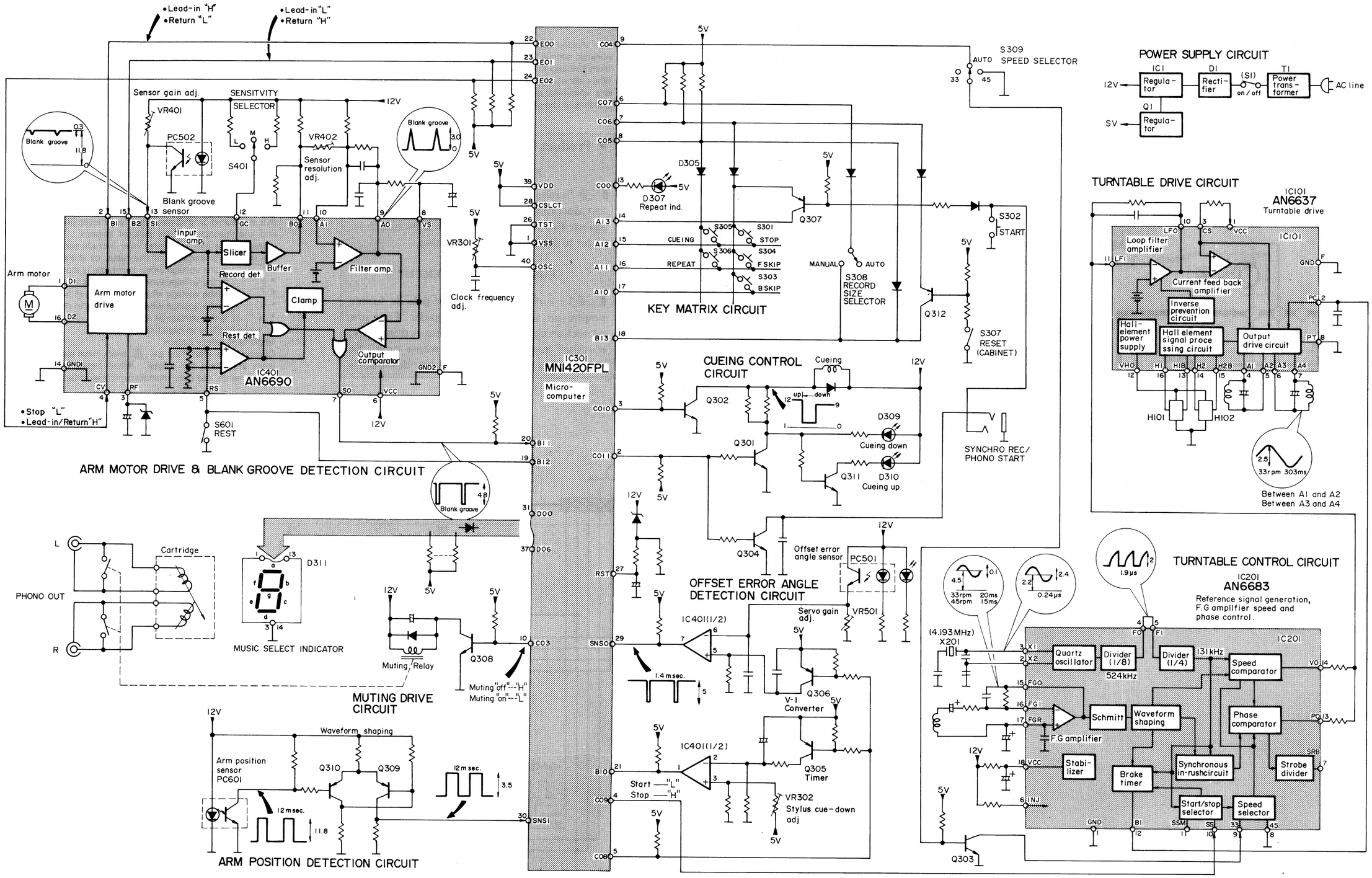
*The part No. of diodes mentioned in the schematic diagram stand for production part No. Regarding the part No. with ✪ mark the production part No. are different from the replacement part No. Therefore, when placing an order for replacement part, please use the part No. in the replacement parts list.

• Power source circuit
Product for [MC] only.



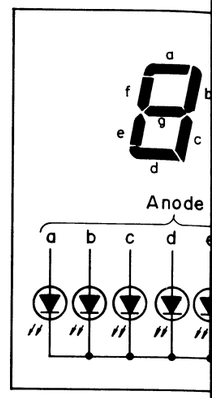


■ BLOCK DIAGRAM



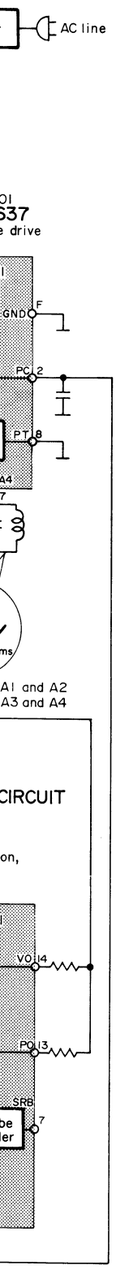
• Music selector indicat
microcomputer (IC30

D311 (LN513RA)



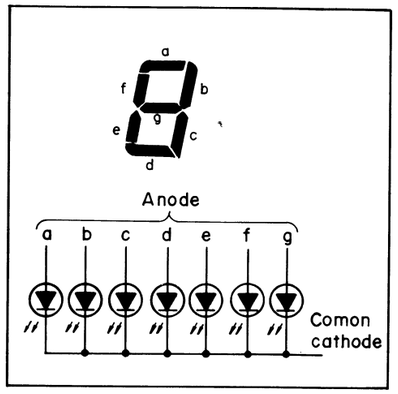
IC301 (MN1420FPL)

Display \ Pin No.	31 (D00) a	32 (D01) b	33 (D02) c
0	H	H	H
1	L	H	H
2	H	H	L
3	H	H	H
4	L	H	H
5	H	L	H
6	H	L	H
7	H	H	H
8	H	H	H
9	H	H	H



- **Music selector indicator (D311) and microcomputer (IC301) terminal voltage**

D311 (LN513RA)



IC301 (MN1420FPL)

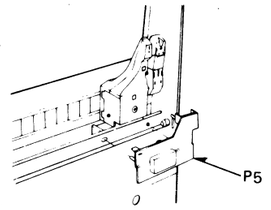
Pin No. / Display	31 (DO0) a	32 (DO1) b	33 (DO2) c	34 (DO3) d	35 (DO4) e	36 (DO5) f	37 (DO6) g
0	H	H	H	H	H	H	L
1	L	H	H	L	L	L	L
2	H	H	L	H	H	L	H
3	H	H	H	H	L	L	H
4	L	H	H	L	L	H	H
5	H	L	H	H	L	H	H
6	H	L	H	H	H	H	H
7	H	H	H	L	L	H	L
8	H	H	H	H	H	H	H
9	H	H	H	H	L	H	H

■ FUNCTION OF TERMINAL (MN1420FPL)

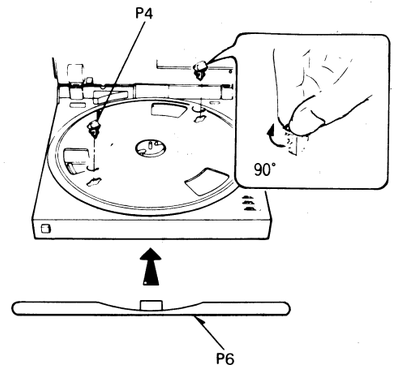
Pin No.	Symbol	Description
1	VSS	Ground terminal
2	CO11	Cueing control terminal ("H" during cueing and cueing down)
3	CO10	Cueing control terminal ("H" only cueing down)
4	CO9	Turntable start/stop select terminal (Start at "L", stop at "H")
5	CO8	Key scan output terminal (Each keyis read in through key scan with A-port)
6	CO7	
7	CO6	
8	CO5	
9	CO4	Turntable speed select output terminal (45 rpm "L", 33 rpm "H")
10	CO3	Muting control terminal (Muting on "L", Muting off "H")
11	CO2	Not used in this unit
12	CO1	
13	CO0	Repeat indicator output terminal (Indicator ON at "L")
14	AI3	Key scan input terminal (Each key is read in through key scan with C-port)
15	AI2	
16	AI1	
17	AI0	
18	BI3	Record size selector input terminal (Read in through key scan with C-port)
19	BI2	Rest position detection input terminal ("L" when tonearm is on rest)
20	BI1	Blank detection and record detection terminals (Blank pulse is active at "L"; 30 cm record is present with "H" at rest position; 30 cm record is not present with "L". When it is at "L" outside the rest position, 17 cm is present; and no record is present at "H".)
21	BI0	Cueing time read input terminal
22	EO0	Arm motor drive control terminal
23	EO1	
24	EO2	
25	EO3	Not used in this unit
26	TST	Test terminal
27	RST	Reset terminal (Micom is reset at "L")
28	CSLCT	Select terminal
29	SNS0	Offset angle detection signal input terminal
30	SNS1	Arm position detection signal input terminal
31	DO0	Segment display output terminal (Lights up at "H")
32	DO1	
33	DO2	
34	DO3	
35	DO4	
36	DO5	
37	DO6	
38	DO7	Not used in this unit
39	VDD	Power supply terminal
40	OSC	Oscillation circuit (Clock frequency is adjusted to 1.36ms)

■ PACKING

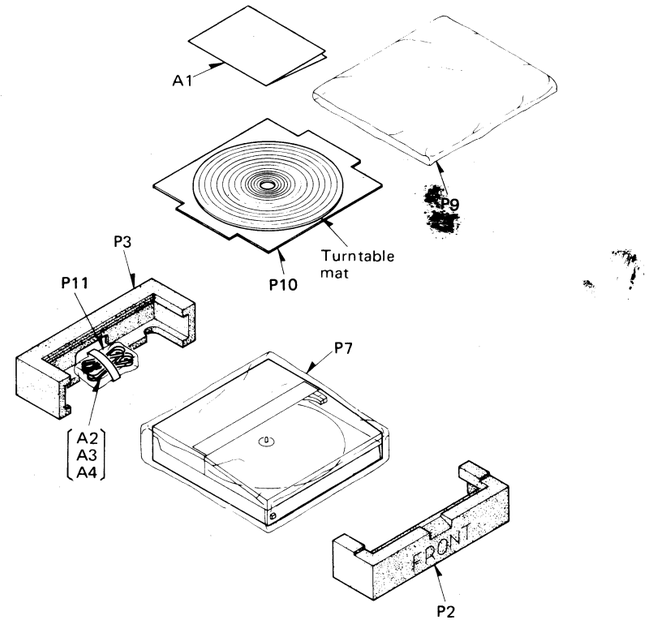
1. Open the upper cabinet and fit the spacer in place.



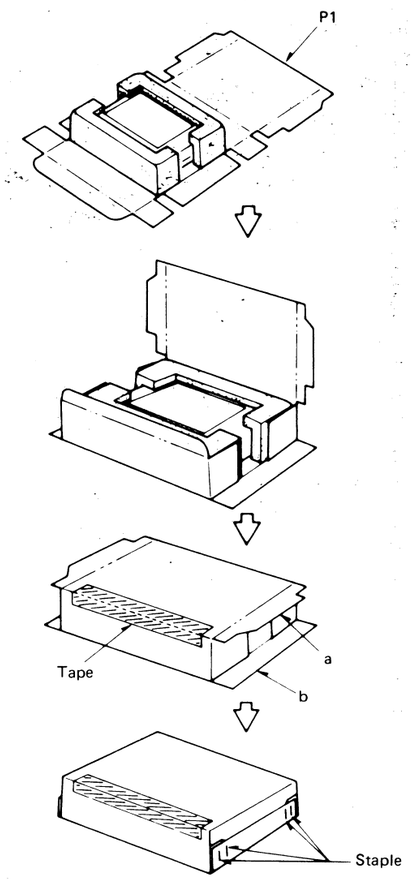
2. Fit the turntable platter clamper and dust cover spacer in place.



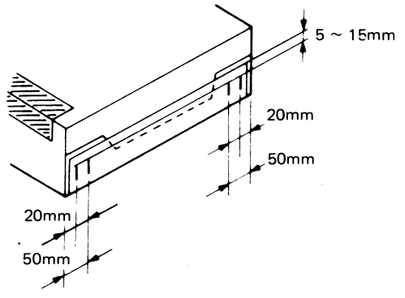
3. Put the into polyethylene bag, and make the package as shown below.



4. Place the unit (with cushions attached) as illustrated.
5. Fold the flaps according to the line marks.
6. Seal the top with adhesive tape.
   *Use gum tape or adhesive cloth tape of 50mm wide at least.
7. For the edges, first fold the flap "a" and then flap "b", and staple. Remember to staple only flap "b". (Use 15 or 16mm staple)



*Stapling positions are shown below.



02150618 91004988
SM-SLJ2 10
SERVICE MANUAL ... DOM ... 1 ST

Printed in Japan
840511500 Ⓗ AM/YW

ORDER NO. DAD84100106S0
A-2

Service Manual

Supplement-1

Quartz Direct Drive Automatic Turntable System

SL-J2

Please use this manual together with the service manual for Model No. SL-J2, Order No. DAD84050089C1 and DAD84060093C8.

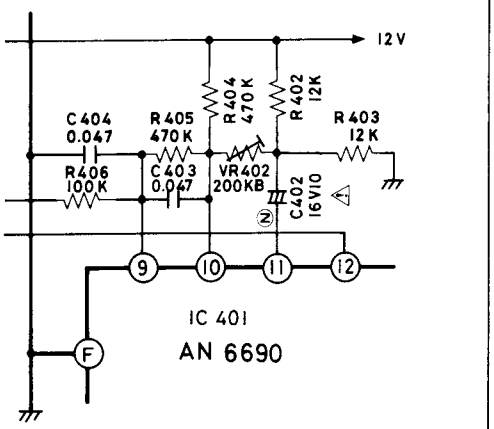
Notes: ★ The circuit of SL-J2 has been changed for the improvement of performance, and correct the adjustment method of servo again and offset voltage.
★ The changes are mentioned in this supplement. Please keep this point in mind when servicing.
★ This supplement should be field with the service manual for Model No. SL-J2. (Order No. DAD84050089C1 or DAD84060093C8)

CHANGES

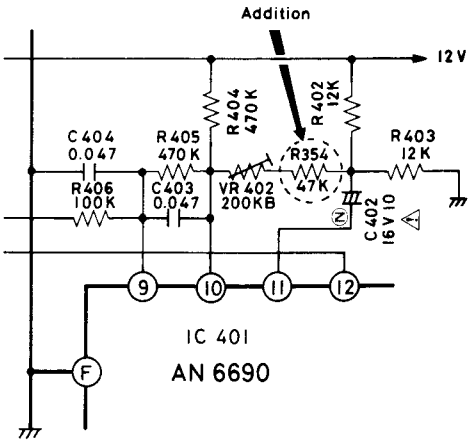
■ SCHEMATIC DIAGRAM

- **Blank groove detection circuit**

OLD



NEW



Matsushita Engineering and Service Company
50 Meadowland Parkway,
Secaucus, New Jersey 07094

Panasonic Hawaii Inc.
91-238 Kauhi St. Ewa Beach
P.O. Box. 774
Honolulu, Hawaii 96808-0774

Matsushita Electric of Canada Limited
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Ontario, L4W 2T3

Panasonic Sales Company, Division of Matsushita Electric of Puerto Rico, Inc.
Ave, 65 De Infanteria, KM 9.7
Victoria, Industrial Park
Carolina, Puerto Rico 00630

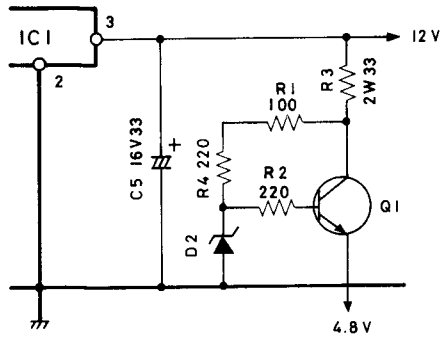
Technics

Matsushita Electric Trading Co., Ltd
P.O. Box 288, Central Osaka Japan

SL-J2

- **Power source circuit**

OLD



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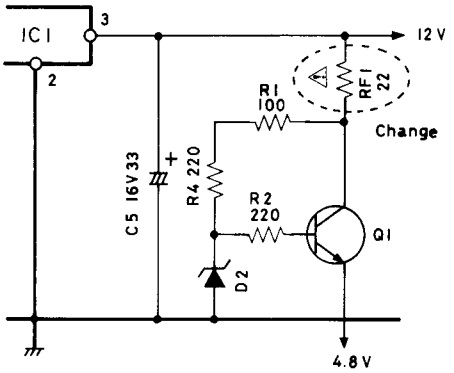
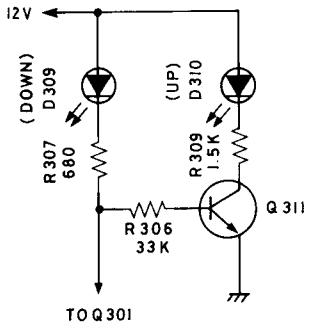


- **LED drive circuit**

OLD



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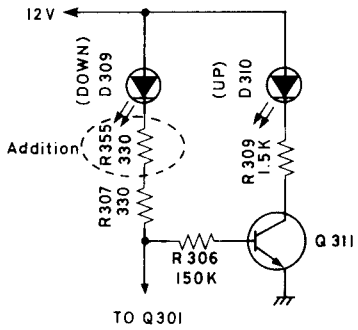
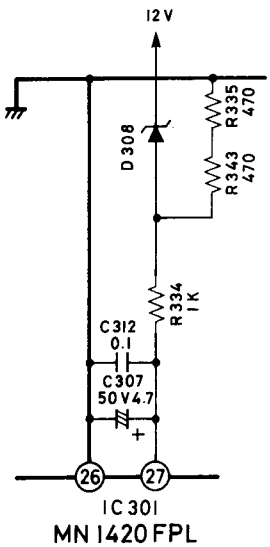
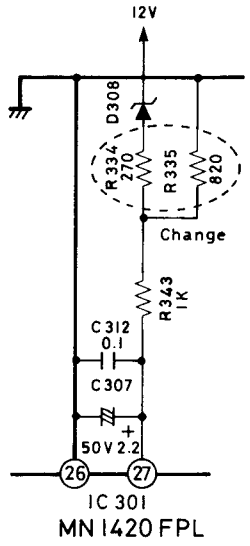


- **Reset circuit**

OLD



NEW



■ REPLACEMENT PARTS LIST (Change in replacement parts list)

Ref. No.	Change of Part No. SL-J2 (OLD) ➡ SL-J2 (NEW)		Part Name & Description	Per Set (Pcs.)	Remarks
DIODES					
D2	.....	**MA4056**	Zener, 5.6 V	1	Addition
D5	MA4056	.....	.....	0	Deletion
D308	MA4075	**MA4062**	Zener, 6.2 V	1	Change
D311B	LN513RA	**LN513RK**	Music Select Indicator	1	Change
D502	SVDEBR3432S	**SVDSLV31VC3**	Tonearm Position Indicator	1	Change
VARIABLE RESISTOR					
VR301	EVN61AA00B54	**EVN61AA00B24**	Clock Frequency Adj., 20 kΩ (B)	1	Change
PHOTO INTERRUPTER					
PC502	SFPABJ0204A	**SFPABJ0205R**	Blank Groove Sensor	1	Change
RESISTORS					
R3	ERG2SJ330	.....	.....	0	Deletion
RF1	.....	**ERD2FCG220P**	Fuse type Carbon, 1/4 W, 22 Ω, ±5%	1	Addition
R306	ERDS2TJ333	**ERDS2TJ154**	Carbon, 1/4 W, 150 kΩ, ±5%	1	Change
R307	ERDS2TJ681	**ERDS2TJ331**	Carbon, 1/4 W, 330 Ω, ±5%	1	Change
R343	ERDS2TJ681	**ERDS2TJ102**	Carbon, 1/4 W, 1 kΩ, ±5%	1	Change

Ref. No.	Change of Part No. SL-J2 (OLD) ➡ SL-J2 (NEW)		Part Name & Description	Per Set (Pcs.)	Remarks
RESISTORS					
R344 ~ 349	ERDS2TJ681	.....	.....	0	Deletion
R350	ERDS2TJ681	**ERDS2TJ561**	Carbon, 1/4 W, 560 Ω, ±5%	1	Change
R351	ERDS2TJ103	**ERDS2TJ123**	Carbon, 1/4 W, 12 kΩ, ±5%	1	Change
R352	.....	**ERDS2TJ103**	Carbon, 1/4 W, 10 kΩ, ±5%	1	Addition
R354	.....	**ERDS2TJ473**	Carbon, 1/4 W, 47 kΩ, ±5%	1	Addition
R355	.....	**ERDS2TJ331**	Carbon, 1/4 W, 330 Ω, ±5%	1	Addition
R401	ERDS2TJ563	**ERDS2TJ103**	Carbon, 1/4 W, 10 kΩ, ±5%	1	Change
R503	ERD25FJ561	**ERD25FJ471**	Carbon, 1/4 W, 470 Ω, ±5%	1	Change
CAPACITORS					
R307	ECEA1HU4R7	**ECEA1HU2R2**	Electrolytic, 50 V, 2.2μF	1	Change
R405	ECEA1HU2R2	**ECEA1CU220**	Electrolytic, 16 V, 22μF	1	Change

■ ADJUSTMENT

: Change of part

• English

Servo gain and offset voltage	1. Remove the dust cover. (Refer to "DISASSEMBLY INSTRUCTION") 2. Open the upper cabinet and hold the cabinet switch with tape. 3. Connect the DC voltmeter to CN301 5-pin (+) and 2-pin (−). 4. Remove the sensor cover.	VR501 (Servo gain) Screw (Offset voltage) **(Fig. 20)**	1. Turn the power switch on. 2. Keep the F skip switch depressed to move the tonearm. 3. Open the upper cabinet. 4. Completely shift the tonearm to the left. Then, adjust VR501 so that the voltage is **6V.** (Servo gain) 5. Set the tonearm to the center and make sure that the output voltage is **3V.** 6. If the voltage is not **3V,** adjust screw so that the output voltage is **3V.** (Offset voltage)

• Deutsch

Servo-Verstärkung und Offset-spannung	1. Die Staubabdeckung entfernen. (Siehe "ANLEITUNG FÜR DIE DEMONTAGE".) 2. Das Gehäuseoberteil öffnen und den Gehäuseschalter mit Klebband in der gedrückten Stellung arretieren. 3. Das Gleichstrom-Voltmeter an CN301, Stift 5 (+) und Stift 2 (−) anschließen. 4. Die Sensorabdeckung entfernen.	VR501 (Servo-Verstärkung) Schraube (Offset-spannung) **(Abb. 20)**	1. Den Ein/Aus-Schalter einschalten. 2. Den F-Überspring-Schalter gedrückt halten, um den Tonarm zu bewegen. 3. Das Gehäuseoberteil öffnen. 4. Den Tonarm ganz nach links bewegen. Dann VR501 so justieren, daß die Spannung **6V** beträgt. (Servo-Verstärkung) 5. Den Tonarm zur Mitte hin stellen und überprüfen, daß, die Ausgangsspannung **3V** beträgt. 6. Falls die Spannung nicht **3V** beträgt, ist die Schraube so zu justieren, daß die Ausgangsspannung **3V** beträgt. (Offset-Spannung)

• Français

Amplification servo-mécanique et tension d'écart de réglage	1. Retirer le couvercle protège-poussière. (Se référer aux "INSTRUCTIONS POUR LE DÉMONTAGE".) 2. Ouvrir le boîtier supérieur et maintenir appuyée la touche du boîtier avec une bande adhésive. 3. Raccorder le voltmètre à C.C. à la broche 5 (+) et à la broche 2 (−) de CN301. 4. Retirer le couvercle du dispositif détecteur.	VR501 (Amplification servo-mécanique) Vis (Tension de décalage) **(Fig. 20)**	1. Mettre en circuit l'interrupteur d'alimentation. 2. Maintenir enfoncé le commutateur de saut F pour déplacer le bras de lecture. 3. Ouvrir le boîtier supérieur. 4. Déplacer complètement le bras de lecture vers la gauche. Puis, ajuster VR501 de telle sorte que la tension soit de **6V.** (Amplification servo-mécanique) 5. Régler le bras de lecture au centre et s'assurerque la tension de sortie soit de **3V.** 6. Si la tension n'est pas de **3V,** ajuster la vis de telle sorte que la tension de sortie soit de **3V.** (Tension de décalage)

• Español

Ganancia del servo-mecanismo y tensión de desnivel	1. Remover la tapa contra el polvo. (Referir a "INSTRUCCION DE DESMONTAJE") 2. Abrir el gabinete superior y sujetar el interruptor del mismo con cinta. 3. Conectar el voltímetro de CC a 5 pernos (+) y 2 pernos (−) de CN301. 4. Remover la cubierta de sensor.	VR501 (Ganancia del servo-mecanismo) Tornillo (Tensión de desnivel) **(Fig. 20)**	1. Encender el interruptor de la corriente. 2. Mantener el interruptor de salto F oprimido para mover el brazo sonoro. 3. Abrir el gabinete superior. 4. Mover completamente el brazo sonoro a la izquierda. Luego, regular VR501 de manera que la tensión sea **6V.** (Genancia del servomecanismo) 5. Colocar el brazo sonoro en el centro y asegurarse de que la tensión de salida sea de **3V.** 6. Si la tensión no es **3V.** regular el tornillo de manera que la tensión de salida sea **3V.** (Tensión de desnivel)

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